



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD05-03A-20181115-06-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

## 8. Duplicates:

### A. Laboratory Duplicate Analysis:

Sample FJD05-03A-20181115-06-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA06-20181115-12-57/DRA06-20181115-12-56. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

## 9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

## 10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

## 11. Laboratory Contact:

No laboratory contact was required.

## 12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18110844

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18110844; Frank J. Doyle Salvage Removal Action. Nine samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA06-20181115-12-57</u>	<u>DRA06-20181115-12-56</u>	<u>EAS04-20181115-06-56</u>
<u>FJD02-05B-20181115-06-56</u>	<u>FJD02-06-20181115-06-56</u>	<u>FJD02-10S-20181115-12-56</u>
<u>FJD03-01-20181115-06-56</u>	<u>FJD03-03-20181115-06-56</u>	<u>FJD05-03A-20181115-06-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 26, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD05-03A-20181115-06-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA06-20181115-12-57/DRA06-20181115-12-56. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD05-03A-20181115-06-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

The laboratory was contacted on December 13, 2018 regarding the lack for a prep page. An acceptable response was received on December 21, 2018.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18110844

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18110844; Frank J. Doyle Salvage Removal Action. Nine samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA06-20181115-12-57</u>	<u>DRA06-20181115-12-56</u>	<u>EAS04-20181115-06-56</u>
<u>FJD02-05B-20181115-06-56</u>	<u>FJD02-06-20181115-06-56</u>	<u>FJD02-10S-20181115-12-56</u>
<u>FJD03-01-20181115-06-56</u>	<u>FJD03-03-20181115-06-56</u>	<u>FJD05-03A-20181115-06-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 26, 2018



## Data Qualifiers

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- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample FJD05-03A-20181115-06-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. QC criteria are that the RPD values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met with the following exception:

ANALYTE	MATRIX	RPD	AFFECTED SAMPLES*	QUALIFIER FLAG
Iron	Solid	52.3	All	JK

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA06-20181115-12-57/DRA06-20181115-12-56. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample FJD05-03A-20181115-06-56 underwent MS/MSD analysis for ICP metals for the solid matrix. The spike recoveries for the all analytes were within the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more. No qualifications are placed on the data.

The post digestion spike recoveries were acceptable. No qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample FJD05-03A-20181115-06-56 underwent serial dilution for the solid matrix for ICP metals. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 5, 10, 50, or 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

### 13. Laboratory Contact

The laboratory was contacted on December 13, 2018 regarding the lack of a sequence log and prep page. An acceptable response was received on December 21, 2018.

### 14. Overall Assessment:

The iron result in all samples was qualified due to high MS/MSD RPD.

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA06-20181115-12-57  
 Collection Date: 15-Nov-2018 12:33

**ANALYTICAL REPORT**

WorkOrder: HS18110844  
 Lab ID: HS18110844-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 16-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Benzo(a)pyrene	U		0.0013	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Benzo(b)fluoranthene	U		0.0016	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Benzo(g,h,i)perylene	U		0.00092	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Benzo(k)fluoranthene	U		0.0012	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Chrysene	U		0.0010	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Fluoranthene	U		0.0014	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Naphthalene	0.0013	JJ	0.00079	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Phenanthrene	U		0.0020	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Pyrene	U		0.00079	0.0043	mg/Kg-dry	1	19-Nov-2018 13:12
Surr: 2-Fluorobiphenyl	68.5			43-125	%REC	1	19-Nov-2018 13:12
Surr: 4-Terphenyl-d14	76.2			32-125	%REC	1	19-Nov-2018 13:12
Surr: Nitrobenzene-d5	66.0			37-125	%REC	1	19-Nov-2018 13:12
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 16-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	18-Nov-2018 11:50
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	18-Nov-2018 11:50
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	18-Nov-2018 11:50
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	18-Nov-2018 11:50
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	18-Nov-2018 11:50
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	18-Nov-2018 11:50
Aroclor 1260	U		0.0052	0.022	mg/Kg-dry	1	18-Nov-2018 11:50
Surr: Decachlorobiphenyl	102			54-143	%REC	1	18-Nov-2018 11:50
Surr: Tetrachloro-m-xylene	89.3			50-140	%REC	1	18-Nov-2018 11:50
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 16-Nov-2018		Analyst: ALR	
Arsenic	17.4		0.0897	0.641	mg/Kg-dry	1	17-Nov-2018 11:15
Cadmium	2.50		0.0346	0.641	mg/Kg-dry	1	17-Nov-2018 11:15
Cobalt	8.37		0.0192	0.641	mg/Kg-dry	1	17-Nov-2018 11:15
Iron	13,900	JK	2.35	64.1	mg/Kg-dry	1	17-Nov-2018 11:15
Lead	108		0.0167	0.641	mg/Kg-dry	1	17-Nov-2018 11:15
Manganese	1,130		2.76	32.1	mg/Kg-dry	50	17-Nov-2018 14:42
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: KVL	
Percent Moisture	23.8		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA06-20181115-12-56  
 Collection Date: 15-Nov-2018 12:33

**ANALYTICAL REPORT**

WorkOrder: HS18110844  
 Lab ID: HS18110844-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 16-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Benzo(a)pyrene	0.0021	JQ	0.0013	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Benzo(b)fluoranthene	0.0029	J	0.0016	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Benzo(g,h,i)perylene	0.0035	J	0.00091	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Benzo(k)fluoranthene	0.0014	J	0.0012	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Chrysene	0.0019	J	0.0010	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Fluoranthene	0.0016	JQ	0.0014	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Indeno(1,2,3-cd)pyrene	0.0021	JQ	0.0010	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Phenanthrene	U		0.0020	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Pyrene	0.0016	JQ	0.00078	0.0043	mg/Kg-dry	1	19-Nov-2018 13:32
Surr: 2-Fluorobiphenyl	69.5			43-125	%REC	1	19-Nov-2018 13:32
Surr: 4-Terphenyl-d14	80.3			32-125	%REC	1	19-Nov-2018 13:32
Surr: Nitrobenzene-d5	62.8			37-125	%REC	1	19-Nov-2018 13:32
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 16-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	18-Nov-2018 14:11
Aroclor 1221	U		0.0074	0.022	mg/Kg-dry	1	18-Nov-2018 14:11
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	18-Nov-2018 14:11
Aroclor 1242	U		0.0078	0.022	mg/Kg-dry	1	18-Nov-2018 14:11
Aroclor 1248	U		0.0078	0.022	mg/Kg-dry	1	18-Nov-2018 14:11
Aroclor 1254	U		0.0062	0.022	mg/Kg-dry	1	18-Nov-2018 14:11
Aroclor 1260	U		0.0053	0.022	mg/Kg-dry	1	18-Nov-2018 14:11
Surr: Decachlorobiphenyl	98.6			54-143	%REC	1	18-Nov-2018 14:11
Surr: Tetrachloro-m-xylene	86.1			50-140	%REC	1	18-Nov-2018 14:11
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 16-Nov-2018		Analyst: ALR	
Arsenic	21.3		0.0886	0.633	mg/Kg-dry	1	17-Nov-2018 12:20
Cadmium	1.71		0.0342	0.633	mg/Kg-dry	1	17-Nov-2018 12:20
Cobalt	11.2		0.0190	0.633	mg/Kg-dry	1	17-Nov-2018 12:20
Iron	15,200	TK	2.32	63.3	mg/Kg-dry	1	17-Nov-2018 12:20
Lead	79.9		0.0165	0.633	mg/Kg-dry	1	17-Nov-2018 12:20
Manganese	1,370		5.44	63.3	mg/Kg-dry	100	17-Nov-2018 14:44
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: KVL	
Percent Moisture	24.7		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS03-20181115-06-56  
 Collection Date: 15-Nov-2018 11:40

## ANALYTICAL REPORT

WorkOrder: HS18110844  
 Lab ID: HS18110844-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270			Prep: SW3541 / 16-Nov-2018		Analyst: GEY
Acenaphthene	U		0.00063	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Acenaphthylene	U		0.0013	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Anthracene	0.0022	JQ	0.00063	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Benz(a)anthracene	0.0055		0.0020	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Benzo(a)pyrene	0.0055		0.0013	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Benzo(b)fluoranthene	0.0088		0.0015	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Benzo(g,h,i)perylene	0.010		0.00088	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Benzo(k)fluoranthene	0.0042		0.0011	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Chrysene	0.0065		0.0010	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Dibenz(a,h)anthracene	0.0077		0.0020	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Fluoranthene	0.0074		0.0014	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Indeno(1,2,3-cd)pyrene	0.0085		0.0010	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Naphthalene	0.00097	JQ	0.00075	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Phenanthrene	0.0080		0.0019	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Pyrene	0.010		0.00075	0.0041	mg/Kg-dry	1	19-Nov-2018 16:47
Surr: 2-Fluorobiphenyl	67.5			43-125	%REC	1	19-Nov-2018 16:47
Surr: 4-Terphenyl-d14	89.1			32-125	%REC	1	19-Nov-2018 16:47
Surr: Nitrobenzene-d5	66.7			37-125	%REC	1	19-Nov-2018 16:47
<b>PCBS BY SW8082A</b>		Method: SW8082			Prep: SW3541/3665A / 16-Nov-2018		Analyst: JBA
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	18-Nov-2018 14:27
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	18-Nov-2018 14:27
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	18-Nov-2018 14:27
Aroclor 1242	U		0.0075	0.021	mg/Kg-dry	1	18-Nov-2018 14:27
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	18-Nov-2018 14:27
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	18-Nov-2018 14:27
Aroclor 1260	0.047		0.0051	0.021	mg/Kg-dry	1	18-Nov-2018 14:27
Surr: Decachlorobiphenyl	108			54-143	%REC	1	18-Nov-2018 14:27
Surr: Tetrachloro-m-xylene	97.4			50-140	%REC	1	18-Nov-2018 14:27
<b>METALS BY SW6020A</b>		Method: SW6020			Prep: SW3050A / 16-Nov-2018		Analyst: ALR
Arsenic	8.62		0.0841	0.601	mg/Kg-dry	1	17-Nov-2018 12:22
Cadmium	0.794		0.0324	0.601	mg/Kg-dry	1	17-Nov-2018 12:22
Cobalt	7.45		0.0180	0.601	mg/Kg-dry	1	17-Nov-2018 12:22
Iron	13,800	TK	2.20	60.1	mg/Kg-dry	1	17-Nov-2018 12:22
Lead	64.2		0.0156	0.601	mg/Kg-dry	1	17-Nov-2018 12:22
Manganese	1,290		5.17	60.1	mg/Kg-dry	100	17-Nov-2018 14:46
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216					Analyst: KVL
Percent Moisture	21.8		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD02-05B-20181115-06-56  
 Collection Date: 15-Nov-2018 11:47

**ANALYTICAL REPORT**  
 WorkOrder: HS18110844  
 Lab ID: HS18110844-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 16-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00063	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Acenaphthylene	U		0.0013	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Anthracene	0.00097	JQ	0.00063	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Benz(a)anthracene	0.0024	J	0.0020	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Benzo(a)pyrene	0.0023	J	0.0013	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Benzo(b)fluoranthene	0.0037	J	0.0015	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Benzo(g,h,i)perylene	0.0024	J	0.00088	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Benzo(k)fluoranthene	0.0017	J	0.0011	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Chrysene	0.0024	J	0.0010	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Fluoranthene	0.0039	JQ	0.0014	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Indeno(1,2,3-cd)pyrene	0.0012	JQ	0.0010	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Phenanthrene	0.0028	JQ	0.0019	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Pyrene	0.0034	JQ	0.00075	0.0041	mg/Kg-dry	1	19-Nov-2018 14:11
Surr: 2-Fluorobiphenyl	73.0			43-125	%REC	1	19-Nov-2018 14:11
Surr: 4-Terphenyl-d14	86.0			32-125	%REC	1	19-Nov-2018 14:11
Surr: Nitrobenzene-d5	65.1			37-125	%REC	1	19-Nov-2018 14:11
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 16-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	18-Nov-2018 14:42
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	18-Nov-2018 14:42
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	18-Nov-2018 14:42
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	18-Nov-2018 14:42
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	18-Nov-2018 14:42
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	18-Nov-2018 14:42
Aroclor 1260	U		0.0050	0.021	mg/Kg-dry	1	18-Nov-2018 14:42
Surr: Decachlorobiphenyl	98.3			54-143	%REC	1	18-Nov-2018 14:42
Surr: Tetrachloro-m-xylene	89.2			50-140	%REC	1	18-Nov-2018 14:42
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 16-Nov-2018		Analyst: ALR	
Arsenic	14.9		0.0863	0.617	mg/Kg-dry	1	17-Nov-2018 12:24
Cadmium	0.323	JQ	0.0333	0.617	mg/Kg-dry	1	17-Nov-2018 12:24
Cobalt	7.83		0.0185	0.617	mg/Kg-dry	1	17-Nov-2018 12:24
Iron	13,700	JL	2.26	61.7	mg/Kg-dry	1	17-Nov-2018 12:24
Lead	15.7		0.0160	0.617	mg/Kg-dry	1	17-Nov-2018 12:24
Manganese	1,100		2.65	30.8	mg/Kg-dry	50	17-Nov-2018 14:48
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: KVL	
Percent Moisture	21.2		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD02-06-20181115-06-56  
 Collection Date: 15-Nov-2018 11:55

## ANALYTICAL REPORT

WorkOrder: HS18110844  
 Lab ID: HS18110844-05  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 16-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00063	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Anthracene	U		0.00063	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Benz(a)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Benzo(a)pyrene	U		0.0013	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Benzo(b)fluoranthene	U		0.0015	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Benzo(g,h,i)perylene	U		0.00089	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Benzo(k)fluoranthene	U		0.0011	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Chrysene	U		0.0010	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Fluoranthene	U		0.0014	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Naphthalene	U		0.00076	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Phenanthrene	U		0.0019	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Pyrene	U		0.00076	0.0042	mg/Kg-dry	1	19-Nov-2018 14:30
Surr: 2-Fluorobiphenyl	66.4			43-125	%REC	1	19-Nov-2018 14:30
Surr: 4-Terphenyl-d14	80.1			32-125	%REC	1	19-Nov-2018 14:30
Surr: Nitrobenzene-d5	63.9			37-125	%REC	1	19-Nov-2018 14:30
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 16-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	18-Nov-2018 14:58
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	18-Nov-2018 14:58
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	18-Nov-2018 14:58
Aroclor 1242	U		0.0075	0.021	mg/Kg-dry	1	18-Nov-2018 14:58
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	18-Nov-2018 14:58
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	18-Nov-2018 14:58
Aroclor 1260	U		0.0051	0.021	mg/Kg-dry	1	18-Nov-2018 14:58
Surr: Decachlorobiphenyl	99.8			54-143	%REC	1	18-Nov-2018 14:58
Surr: Tetrachloro-m-xylene	91.8			50-140	%REC	1	18-Nov-2018 14:58
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 16-Nov-2018		Analyst: ALR	
Arsenic	25.5		0.0824	0.589	mg/Kg-dry	1	17-Nov-2018 12:26
Cadmium	0.511	JK	0.0318	0.589	mg/Kg-dry	1	17-Nov-2018 12:26
Cobalt	11.1		0.0177	0.589	mg/Kg-dry	1	17-Nov-2018 12:26
Iron	19,700	JK	2.15	58.9	mg/Kg-dry	1	17-Nov-2018 12:26
Lead	31.4		0.0153	0.589	mg/Kg-dry	1	17-Nov-2018 12:26
Manganese	1,570		5.06	58.9	mg/Kg-dry	100	17-Nov-2018 14:49
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: KVL	
Percent Moisture	21.7		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD02-10S-20181115-12-56  
 Collection Date: 15-Nov-2018 11:51

**ANALYTICAL REPORT**  
 WorkOrder: HS18110844  
 Lab ID: HS18110844-06  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270			Prep: SW3541 / 16-Nov-2018		Analyst: GEY
Acenaphthene	U		0.00063	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
<b>Anthracene</b>	<b>0.00076</b>	<b>+ JQ</b>	<b>0.00063</b>	<b>0.0042</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>19-Nov-2018 14:50</b>
Benz(a)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
Benzo(a)pyrene	U		0.0013	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
Benzo(b)fluoranthene	U		0.0015	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
Benzo(g,h,i)perylene	U		0.00088	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
Benzo(k)fluoranthene	U		0.0011	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
Chrysene	U		0.0010	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
Fluoranthene	U		0.0014	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
<b>Fluorene</b>	<b>0.0014</b>	<b>+ JQ</b>	<b>0.0014</b>	<b>0.0042</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>19-Nov-2018 14:50</b>
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0042	mg/Kg-dry	1	19-Nov-2018 14:50
<b>Naphthalene</b>	<b>0.0020</b>	<b>+ JQ</b>	<b>0.00076</b>	<b>0.0042</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>19-Nov-2018 14:50</b>
<b>Phenanthrene</b>	<b>0.0036</b>	<b>+ JQ</b>	<b>0.0019</b>	<b>0.0042</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>19-Nov-2018 14:50</b>
<b>Pyrene</b>	<b>0.0020</b>	<b>+ JQ</b>	<b>0.00076</b>	<b>0.0042</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>19-Nov-2018 14:50</b>
Surr: 2-Fluorobiphenyl	60.8			43-125	%REC	1	19-Nov-2018 14:50
Surr: 4-Terphenyl-d14	75.2			32-125	%REC	1	19-Nov-2018 14:50
Surr: Nitrobenzene-d5	57.5			37-125	%REC	1	19-Nov-2018 14:50
<b>PCBS BY SW8082A</b>		Method: SW8082			Prep: SW3541/3665A / 16-Nov-2018		Analyst: JBA
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	18-Nov-2018 15:14
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	18-Nov-2018 15:14
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	18-Nov-2018 15:14
Aroclor 1242	U		0.0075	0.021	mg/Kg-dry	1	18-Nov-2018 15:14
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	18-Nov-2018 15:14
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	18-Nov-2018 15:14
Aroclor 1260	U		0.0051	0.021	mg/Kg-dry	1	18-Nov-2018 15:14
Surr: Decachlorobiphenyl	88.9			54-143	%REC	1	18-Nov-2018 15:14
Surr: Tetrachloro-m-xylene	81.8			50-140	%REC	1	18-Nov-2018 15:14
<b>METALS BY SW6020A</b>		Method: SW6020			Prep: SW3050A / 16-Nov-2018		Analyst: ALR
Arsenic	50.9		0.0850	0.607	mg/Kg-dry	1	17-Nov-2018 12:28
Cadmium	0.474	<b>+ JQ</b>	0.0328	0.607	mg/Kg-dry	1	17-Nov-2018 12:28
Cobalt	12.0		0.0182	0.607	mg/Kg-dry	1	17-Nov-2018 12:28
Iron	23,700	<b>JY</b>	22.2	607	mg/Kg-dry	10	17-Nov-2018 15:02
Lead	19.3		0.0158	0.607	mg/Kg-dry	1	17-Nov-2018 12:28
Manganese	1,520		5.22	60.7	mg/Kg-dry	100	17-Nov-2018 15:04
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216					Analyst: KVL
Percent Moisture	21.7		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-01-20181115-06-56  
 Collection Date: 15-Nov-2018 12:14

**ANALYTICAL REPORT**  
 WorkOrder: HS18110844  
 Lab ID: HS18110844-07  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 16-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Benzo(a)pyrene	0.0013	JQ	0.0013	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Benzo(b)fluoranthene	0.0022	J	0.0016	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Benzo(g,h,i)perylene	0.0022	J	0.00091	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Benzo(k)fluoranthene	0.0018	J	0.0012	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Chrysene	0.0017	J	0.0010	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Fluoranthene	0.0019	JQ	0.0014	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Indeno(1,2,3-cd)pyrene	0.0016	JQ	0.0010	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Phenanthrene	U		0.0019	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Pyrene	0.0034	JQ	0.00078	0.0043	mg/Kg-dry	1	19-Nov-2018 15:10
Surr: 2-Fluorobiphenyl	60.9			43-125	%REC	1	19-Nov-2018 15:10
Surr: 4-Terphenyl-d14	75.5			32-125	%REC	1	19-Nov-2018 15:10
Surr: Nitrobenzene-d5	58.7			37-125	%REC	1	19-Nov-2018 15:10
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 16-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	18-Nov-2018 15:30
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	18-Nov-2018 15:30
Aroclor 1232	U		0.0058	0.022	mg/Kg-dry	1	18-Nov-2018 15:30
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	18-Nov-2018 15:30
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	18-Nov-2018 15:30
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	18-Nov-2018 15:30
Aroclor 1260	0.043		0.0052	0.022	mg/Kg-dry	1	18-Nov-2018 15:30
Surr: Decachlorobiphenyl	102			54-143	%REC	1	18-Nov-2018 15:30
Surr: Tetrachloro-m-xylene	92.2			50-140	%REC	1	18-Nov-2018 15:30
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 16-Nov-2018		Analyst: ALR	
Arsenic	13.2		0.0857	0.612	mg/Kg-dry	1	17-Nov-2018 12:30
Cadmium	0.495	JQ	0.0331	0.612	mg/Kg-dry	1	17-Nov-2018 12:30
Cobalt	12.3		0.0184	0.612	mg/Kg-dry	1	17-Nov-2018 12:30
Iron	20,200	JY	2.24	61.2	mg/Kg-dry	1	17-Nov-2018 12:30
Lead	54.2		0.0159	0.612	mg/Kg-dry	1	17-Nov-2018 12:30
Manganese	1,720		5.26	61.2	mg/Kg-dry	100	17-Nov-2018 15:06
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: KVL	
Percent Moisture	23.4		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

*[Handwritten signature]*  
 12/14/18

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-03-20181115-06-56  
 Collection Date: 15-Nov-2018 12:04

**ANALYTICAL REPORT**  
 WorkOrder: HS18110844  
 Lab ID: HS18110844-08  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 16-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00063	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Acenaphthylene	U		0.0013	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Anthracene	U		0.00063	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Benzo(a)pyrene	0.0018	JY	0.0013	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Benzo(b)fluoranthene	0.0019	JY	0.0015	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Benzo(g,h,i)perylene	U		0.00088	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Benzo(k)fluoranthene	0.0012	JY	0.0011	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Chrysene	0.0025	JY	0.0010	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Indeno(1,2,3-cd)pyrene	0.0014	JY	0.0010	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Naphthalene	0.0014	JY	0.00075	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Pyrene	0.0027	JY	0.00075	0.0041	mg/Kg-dry	1	19-Nov-2018 15:29
Surr: 2-Fluorobiphenyl	56.7			43-125	%REC	1	19-Nov-2018 15:29
Surr: 4-Terphenyl-d14	80.2			32-125	%REC	1	19-Nov-2018 15:29
Surr: Nitrobenzene-d5	56.5			37-125	%REC	1	19-Nov-2018 15:29
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 16-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	18-Nov-2018 15:45
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	18-Nov-2018 15:45
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	18-Nov-2018 15:45
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	18-Nov-2018 15:45
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	18-Nov-2018 15:45
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	18-Nov-2018 15:45
Aroclor 1260	0.12		0.0050	0.021	mg/Kg-dry	1	18-Nov-2018 15:45
Surr: Decachlorobiphenyl	122			54-143	%REC	1	18-Nov-2018 15:45
Surr: Tetrachloro-m-xylene	101			50-140	%REC	1	18-Nov-2018 15:45
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 16-Nov-2018		Analyst: ALR	
Arsenic	29.8		0.0837	0.598	mg/Kg-dry	1	17-Nov-2018 12:32
Cadmium	0.711		0.0323	0.598	mg/Kg-dry	1	17-Nov-2018 12:32
Cobalt	13.7		0.0179	0.598	mg/Kg-dry	1	17-Nov-2018 12:32
Iron	20,200	JY	2.19	59.8	mg/Kg-dry	1	17-Nov-2018 12:32
Lead	50.0		0.0155	0.598	mg/Kg-dry	1	17-Nov-2018 12:32
Manganese	1,970		5.14	59.8	mg/Kg-dry	100	17-Nov-2018 15:08
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: KVL	
Percent Moisture	21.0		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD05-03A-20181115-06-56  
 Collection Date: 15-Nov-2018 12:22

**ANALYTICAL REPORT**  
 WorkOrder: HS18110844  
 Lab ID: HS18110844-09  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 16-Nov-2018	Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Anthracene	0.00066	JJQ	0.00065	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Benz(a)anthracene	0.0036	JJQ	0.0021	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Benzo(a)pyrene	0.0031	JJQ	0.0013	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Benzo(b)fluoranthene	0.0053		0.0016	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Benzo(g,h,i)perylene	0.0034	JJQ	0.00091	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Benzo(k)fluoranthene	0.0034	JJQ	0.0012	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Chrysene	0.0040	JJQ	0.0010	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Fluoranthene	0.0049		0.0014	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Indeno(1,2,3-cd)pyrene	0.0051		0.0010	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Phenanthrene	0.0035	JJQ	0.0019	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Pyrene	0.0064		0.00078	0.0043	mg/Kg-dry	1	19-Nov-2018 15:49
Surr: 2-Fluorobiphenyl	70.2			43-125	%REC	1	19-Nov-2018 15:49
Surr: 4-Terphenyl-d14	85.1			32-125	%REC	1	19-Nov-2018 15:49
Surr: Nitrobenzene-d5	66.0			37-125	%REC	1	19-Nov-2018 15:49
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 16-Nov-2018	Analyst: JBA	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	18-Nov-2018 12:05
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	18-Nov-2018 12:05
Aroclor 1232	U		0.0058	0.022	mg/Kg-dry	1	18-Nov-2018 12:05
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	18-Nov-2018 12:05
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	18-Nov-2018 12:05
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	18-Nov-2018 12:05
Aroclor 1260	0.14		0.0052	0.022	mg/Kg-dry	1	18-Nov-2018 12:05
Surr: Decachlorobiphenyl	109			54-143	%REC	1	18-Nov-2018 12:05
Surr: Tetrachloro-m-xylene	96.3			50-140	%REC	1	18-Nov-2018 12:05
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 16-Nov-2018	Analyst: ALR	
Arsenic	23.6		0.0839	0.599	mg/Kg-dry	1	17-Nov-2018 11:05
Cadmium	0.874		0.0323	0.599	mg/Kg-dry	1	17-Nov-2018 11:05
Cobalt	7.35		0.0180	0.599	mg/Kg-dry	1	17-Nov-2018 11:05
Iron	14,000	JJQ	2.19	59.9	mg/Kg-dry	1	17-Nov-2018 11:05
Lead	73.4		0.0779	3.00	mg/Kg-dry	5	17-Nov-2018 14:06
Manganese	1,380		5.15	59.9	mg/Kg-dry	100	17-Nov-2018 14:17
<b>MOISTURE - ASTM D2216</b>			Method: ASTM D2216			Analyst: KVL	
Percent Moisture	23.2		0.0100	0.0100	wt%	1	17-Nov-2018 11:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

12/14/18

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18111007

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111007; Frank J. Doyle Salvage Removal Action. Ten samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>EAS04-20181119-12-56</u>	<u>EAS05-20181119-12-56</u>	<u>FJD03-02-20181119-24-56</u>
<u>FJD03-04-20181119-24-56</u>	<u>FJD03-07-20181119-06-56</u>	<u>FJD03-07-20181119-06-57</u>
<u>FJD03-08-20181119-24-56</u>	<u>FJD05-04A-20181119-06-56</u>	<u>FJD02-08-20181119-12-56</u>
<u>FJD03-05-20181119-06-56</u>	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 26, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided or were diluted out. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD03-08-20181119-24-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided with the following exceptions:

ANALYTE	MATRIX	%R/%R	QC LIMITS	AFFECTED SAMPLES	QUALIFIER FLAG
Aroclor 1260	Solid	177/190	54-137%	All	JH, Aroclor-1260



## 8. Duplicates:

### A. Laboratory Duplicate Analysis:

Sample FJD03-08-20181119-24-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD03-07-20181119-06-56/FJD03-07-20181119-06-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

## 9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

## 10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Some PCB samples were analyzed at a dilution for some compounds. Reporting limits for these compounds in these samples were elevated as a result of the dilutions performed.

## 11. Laboratory Contact:

The laboratory was contacted on December 13, 2018 regarding an incomplete method blank form. An acceptable response was received on December 24, 2018.

## 12. Overall Assessment:

The Aroclor 1260 result in one sample was estimated due to high MS/MSD recoveries.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18111007

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111007; Frank J. Doyle Salvage Removal Action. Ten samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>EAS04-20181119-12-56</u>	<u>EAS05-20181119-12-56</u>	<u>FJD03-02-20181119-24-56</u>
<u>FJD03-04-20181119-24-56</u>	<u>FJD03-07-20181119-06-56</u>	<u>FJD03-07-20181119-06-57</u>
<u>FJD03-08-20181119-24-56</u>	<u>FJD05-04A-20181119-06-56</u>	<u>FJD02-08-20181119-12-56</u>
<u>FJD03-05-20181119-06-56</u>	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 14, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample EAS04-20181119-12-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD03-07-20181119-06-56/FJD03-07-20181119-06-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample EAS04-20181119-12-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

**SITE NAME** Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER	20600.012.001.1175.01	TDD NUMBER	0001/18-175
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PROJECT NUMBER	SDG NUMBER	HS18111007
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111007; Frank J. Doyle Salvage Removal Action. Ten samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

[illegible]

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski

DATE December 26, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample FJD03-08-20181119-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. QC criteria are that the RPD values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD03-07-20181119-06-56/FJD03-07-20181119-06-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample FJD03-08-20181119-24-56 underwent MS/MSD analysis for ICP metals for the solid matrix. The spike recoveries for the following analytes were outside of the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more:

ANALYTE	MATRIX	%R/%R	AFFECTED SAMPLES	QUALIFIER FLAG
Lead	Solid	73.1/63.9	All	JL

The post digestion spike recoveries were acceptable. No further qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample FJD03-08-20181119-24-56 underwent serial dilution for the solid matrix for ICP metals. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

### 13. Laboratory Contact

The laboratory was contacted on December 13, 2018 regarding the lack of a sequence log and prep page. An acceptable response was received on December 24, 2018.

### 14. Overall Assessment:

The lead result in all samples was qualified due to low MS/MSD recoveries.

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS04-20181119-12-56  
 Collection Date: 19-Nov-2018 11:53

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 20-Nov-2018		Analyst: ACN	
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Benzo(b)fluoranthene	0.0023	J	0.0015	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Benzo(g,h,i)perylene	0.0026	J	0.00087	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Benzo(k)fluoranthene	0.0013	J	0.0011	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Chrysene	0.0026	J	0.0010	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Fluoranthene	0.0029	J	0.0014	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Naphthalene	0.0016	J	0.00075	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Phenanthrene	0.0030	J	0.0019	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Pyrene	0.0021	J	0.00075	0.0041	mg/Kg-dry	1	20-Nov-2018 20:10
Surr: 2-Fluorobiphenyl	86.1			43-125	%REC	1	20-Nov-2018 20:10
Surr: 4-Terphenyl-d14	92.8			32-125	%REC	1	20-Nov-2018 20:10
Surr: Nitrobenzene-d5	86.4			37-125	%REC	1	20-Nov-2018 20:10
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	21-Nov-2018 09:29
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	21-Nov-2018 09:29
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	21-Nov-2018 09:29
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	21-Nov-2018 09:29
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	21-Nov-2018 09:29
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	21-Nov-2018 09:29
Aroclor 1260	2.9		0.10	0.42	mg/Kg-dry	20	21-Nov-2018 13:26
Surr: Decachlorobiphenyl	86.1	J		54-143	%REC	20	21-Nov-2018 13:26
Surr: Decachlorobiphenyl	102			54-143	%REC	1	21-Nov-2018 09:29
Surr: Tetrachloro-m-xylene	93.7			50-140	%REC	1	21-Nov-2018 09:29
Surr: Tetrachloro-m-xylene	92.7	J		50-140	%REC	20	21-Nov-2018 13:26
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 20-Nov-2018		Analyst: JCJ	
Arsenic	8.90		0.0824	0.588	mg/Kg-dry	1	21-Nov-2018 14:52
Cadmium	0.505	J	0.0318	0.588	mg/Kg-dry	1	21-Nov-2018 14:52
Cobalt	10.2		0.0177	0.588	mg/Kg-dry	1	21-Nov-2018 14:52
Iron	19,200		2.15	58.8	mg/Kg-dry	1	21-Nov-2018 14:52
Lead	31.7	JL	0.0153	0.588	mg/Kg-dry	1	21-Nov-2018 14:52
Manganese	2,030		5.06	58.8	mg/Kg-dry	100	21-Nov-2018 18:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: EAS04-20181119-12-56  
Collection Date: 19-Nov-2018 11:53

**ANALYTICAL REPORT**

WorkOrder: HS18111007  
Lab ID: HS18111007-01  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: JHD
Percent Moisture	20.1		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS05-20181119-12-56  
 Collection Date: 19-Nov-2018 12:03

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 20-Nov-2018		Analyst: ACN	
Acenaphthene	U		0.00064	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Anthracene	0.00084	JQ	0.00064	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Benz(a)anthracene	0.0029	J	0.0021	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Benzo(a)pyrene	0.0029	J	0.0013	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Benzo(b)fluoranthene	0.0040	J	0.0015	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Benzo(g,h,i)perylene	0.0046		0.00090	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Benzo(k)fluoranthene	0.0024	JQ	0.0012	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Chrysene	0.0047		0.0010	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Dibenz(a,h)anthracene	0.0025	JQ	0.0021	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Fluoranthene	0.0051		0.0014	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Indeno(1,2,3-cd)pyrene	0.0036	JQ	0.0010	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Naphthalene	0.00090	J	0.00077	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Phenanthrene	0.0034	J	0.0019	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Pyrene	0.0053		0.00077	0.0043	mg/Kg-dry	1	20-Nov-2018 21:09
Surr: 2-Fluorobiphenyl	85.3			43-125	%REC	1	20-Nov-2018 21:09
Surr: 4-Terphenyl-d14	86.6			32-125	%REC	1	20-Nov-2018 21:09
Surr: Nitrobenzene-d5	81.6			37-125	%REC	1	20-Nov-2018 21:09
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0054	0.021	mg/Kg-dry	1	21-Nov-2018 09:45
Aroclor 1221	U		0.0072	0.021	mg/Kg-dry	1	21-Nov-2018 09:45
Aroclor 1232	U		0.0058	0.021	mg/Kg-dry	1	21-Nov-2018 09:45
Aroclor 1242	U		0.0076	0.021	mg/Kg-dry	1	21-Nov-2018 09:45
Aroclor 1248	U		0.0076	0.021	mg/Kg-dry	1	21-Nov-2018 09:45
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	21-Nov-2018 09:45
Aroclor 1260	0.71		0.026	0.11	mg/Kg-dry	5	21-Nov-2018 13:41
Surr: Decachlorobiphenyl	95.7	J		54-143	%REC	5	21-Nov-2018 13:41
Surr: Decachlorobiphenyl	95.1			54-143	%REC	1	21-Nov-2018 09:45
Surr: Tetrachloro-m-xylene	88.9			50-140	%REC	1	21-Nov-2018 09:45
Surr: Tetrachloro-m-xylene	79.3	J		50-140	%REC	5	21-Nov-2018 13:41
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 20-Nov-2018		Analyst: JCJ	
Arsenic	10.0		0.0842	0.602	mg/Kg-dry	1	21-Nov-2018 14:54
Cadmium	0.582	JQ	0.0325	0.602	mg/Kg-dry	1	21-Nov-2018 14:54
Cobalt	11.7		0.0181	0.602	mg/Kg-dry	1	21-Nov-2018 14:54
Iron	26,100		220	6020	mg/Kg-dry	100	21-Nov-2018 19:01
Lead	35.7	JL	0.0156	0.602	mg/Kg-dry	1	21-Nov-2018 14:54
Manganese	2,220		5.17	60.2	mg/Kg-dry	100	21-Nov-2018 19:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	Weston Solutions, Inc.	<b>ANALYTICAL REPORT</b>
Project:	FJ Doyle RA/TX	WorkOrder:HS18111007
Sample ID:	EAS05-20181119-12-56	Lab ID:HS18111007-02
Collection Date:	19-Nov-2018 12:03	Matrix:Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JHD
Percent Moisture	22.5		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

8/ 12/14/18

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-02-20181119-24-56  
 Collection Date: 19-Nov-2018 14:41

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 20-Nov-2018		Analyst: ACN	
Acenaphthene	U		0.00057	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Acenaphthylene	U		0.0011	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Anthracene	U		0.00057	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Benz(a)anthracene	U		0.0018	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Benzo(a)pyrene	U		0.0011	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Benzo(b)fluoranthene	U		0.0014	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Benzo(g,h,i)perylene	0.0011	J	0.00080	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Benzo(k)fluoranthene	U		0.0010	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Chrysene	U		0.00091	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Dibenz(a,h)anthracene	U		0.0018	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Fluoranthene	U		0.0013	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Fluorene	U		0.0013	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Indeno(1,2,3-cd)pyrene	U		0.00091	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Naphthalene	0.00076	J	0.00068	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Phenanthrene	U		0.0017	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Pyrene	0.00079	J	0.00068	0.0038	mg/Kg-dry	1	20-Nov-2018 21:28
Surr: 2-Fluorobiphenyl	82.0			43-125	%REC	1	20-Nov-2018 21:28
Surr: 4-Terphenyl-d14	93.8			32-125	%REC	1	20-Nov-2018 21:28
Surr: Nitrobenzene-d5	81.8			37-125	%REC	1	20-Nov-2018 21:28
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0048	0.019	mg/Kg-dry	1	21-Nov-2018 10:01
Aroclor 1221	U		0.0064	0.019	mg/Kg-dry	1	21-Nov-2018 10:01
Aroclor 1232	U		0.0051	0.019	mg/Kg-dry	1	21-Nov-2018 10:01
Aroclor 1242	U		0.0067	0.019	mg/Kg-dry	1	21-Nov-2018 10:01
Aroclor 1248	U		0.0067	0.019	mg/Kg-dry	1	21-Nov-2018 10:01
Aroclor 1254	U		0.0054	0.019	mg/Kg-dry	1	21-Nov-2018 10:01
Aroclor 1260	U		0.0046	0.019	mg/Kg-dry	1	21-Nov-2018 10:01
Surr: Decachlorobiphenyl	103			54-143	%REC	1	21-Nov-2018 10:01
Surr: Tetrachloro-m-xylene	80.5			50-140	%REC	1	21-Nov-2018 10:01
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3060A / 20-Nov-2018		Analyst: JCJ	
Arsenic	3.54		0.0750	0.536	mg/Kg-dry	1	21-Nov-2018 14:56
Cadmium	0.287	J	0.0289	0.536	mg/Kg-dry	1	21-Nov-2018 14:56
Cobalt	4.08		0.0161	0.536	mg/Kg-dry	1	21-Nov-2018 14:56
Iron	7,070		1.96	53.6	mg/Kg-dry	1	21-Nov-2018 14:56
Lead	3.83	SL	0.0139	0.536	mg/Kg-dry	1	21-Nov-2018 14:56
Manganese	1,330		4.61	53.6	mg/Kg-dry	100	21-Nov-2018 19:03
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: JHD	
Percent Moisture	12.8		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-04-20181119-24-56  
 Collection Date: 19-Nov-2018 14:31

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270			Prep: SW3541 / 20-Nov-2018		Analyst: ACN
Acenaphthene	U		0.00063	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Anthracene	U		0.00063	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Benz(a)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Benzo(a)pyrene	U		0.0013	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Benzo(b)fluoranthene	U		0.0015	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Benzo(g,h,i)perylene	0.0018	JQ	0.00089	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Benzo(k)fluoranthene	U		0.0011	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Chrysene	U		0.0010	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Fluoranthene	U		0.0014	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Indeno(1,2,3-cd)pyrene	0.0018	JQ	0.0010	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Naphthalene	U		0.00076	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Phenanthrene	U		0.0019	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Pyrene	U		0.00076	0.0042	mg/Kg-dry	1	20-Nov-2018 21:48
Surr: 2-Fluorobiphenyl	83.1			43-125	%REC	1	20-Nov-2018 21:48
Surr: 4-Terphenyl-d14	94.7			32-125	%REC	1	20-Nov-2018 21:48
Surr: Nitrobenzene-d5	77.7			37-125	%REC	1	20-Nov-2018 21:48
<b>PCBS BY SW8082A</b>		Method: SW8082			Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	21-Nov-2018 10:16
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	21-Nov-2018 10:16
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	21-Nov-2018 10:16
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	21-Nov-2018 10:16
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	21-Nov-2018 10:16
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	21-Nov-2018 10:16
Aroclor 1260	U		0.0050	0.021	mg/Kg-dry	1	21-Nov-2018 10:16
Surr: Decachlorobiphenyl	108			54-143	%REC	1	21-Nov-2018 10:16
Surr: Tetrachloro-m-xylene	94.0			50-140	%REC	1	21-Nov-2018 10:16
<b>METALS BY SW6020A</b>		Method: SW6020			Prep: SW3050A / 20-Nov-2018		Analyst: JCJ
Arsenic	5.12		0.0847	0.605	mg/Kg-dry	1	21-Nov-2018 14:58
Cadmium	0.312	JQ	0.0327	0.605	mg/Kg-dry	1	21-Nov-2018 14:58
Cobalt	5.34		0.0182	0.605	mg/Kg-dry	1	21-Nov-2018 14:58
Iron	12,600		2.21	60.5	mg/Kg-dry	1	21-Nov-2018 14:58
Lead	7.62	JL	0.0157	0.605	mg/Kg-dry	1	21-Nov-2018 14:58
Manganese	1,160		5.20	60.5	mg/Kg-dry	100	21-Nov-2018 19:06
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216					Analyst: JHD
Percent Moisture	21.1		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-07-20181119-06-56  
 Collection Date: 19-Nov-2018 12:14

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-05  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 20-Nov-2018		Analyst: ACN	
Acenaphthene	U		0.00061	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Anthracene	0.00062	J	0.00061	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Benz(a)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Benzo(a)pyrene	0.0016	J	0.0012	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Benzo(b)fluoranthene	0.0029	J	0.0015	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Benzo(g,h,i)perylene	0.0016	J	0.00085	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Benzo(k)fluoranthene	U		0.0011	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Chrysene	0.0051		0.00097	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Fluoranthene	0.0036	J	0.0013	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Indeno(1,2,3-cd)pyrene	0.0011	J	0.00097	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Naphthalene	U		0.00073	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Phenanthrene	U		0.0018	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Pyrene	0.0037	J	0.00073	0.0040	mg/Kg-dry	1	20-Nov-2018 22:08
Surr: 2-Fluorobiphenyl	80.8			43-125	%REC	1	20-Nov-2018 22:08
Surr: 4-Terphenyl-d14	92.6			32-125	%REC	1	20-Nov-2018 22:08
Surr: Nitrobenzene-d5	81.3			37-125	%REC	1	20-Nov-2018 22:08
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	21-Nov-2018 10:32
Aroclor 1221	U		0.0068	0.020	mg/Kg-dry	1	21-Nov-2018 10:32
Aroclor 1232	U		0.0054	0.020	mg/Kg-dry	1	21-Nov-2018 10:32
Aroclor 1242	U		0.0071	0.020	mg/Kg-dry	1	21-Nov-2018 10:32
Aroclor 1248	U		0.0071	0.020	mg/Kg-dry	1	21-Nov-2018 10:32
Aroclor 1254	U		0.0057	0.020	mg/Kg-dry	1	21-Nov-2018 10:32
Aroclor 1260	5.0		0.097	0.40	mg/Kg-dry	20	21-Nov-2018 13:57
Surr: Decachlorobiphenyl	72.2	J		54-143	%REC	20	21-Nov-2018 13:57
Surr: Decachlorobiphenyl	92.6			54-143	%REC	1	21-Nov-2018 10:32
Surr: Tetrachloro-m-xylene	83.3			50-140	%REC	1	21-Nov-2018 10:32
Surr: Tetrachloro-m-xylene	97.2	J		50-140	%REC	20	21-Nov-2018 13:57
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 20-Nov-2018		Analyst: JCJ	
Arsenic	8.69		0.0792	0.566	mg/Kg-dry	1	21-Nov-2018 15:00
Cadmium	0.829		0.0305	0.566	mg/Kg-dry	1	21-Nov-2018 15:00
Cobalt	6.12		0.0170	0.566	mg/Kg-dry	1	21-Nov-2018 15:00
Iron	11,500		2.07	56.6	mg/Kg-dry	1	21-Nov-2018 15:00
Lead	78.1	JL	0.0147	0.566	mg/Kg-dry	1	21-Nov-2018 15:00
Manganese	1,120		4.86	56.6	mg/Kg-dry	100	21-Nov-2018 19:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD03-07-20181119-06-56  
Collection Date: 19-Nov-2018 12:14

**ANALYTICAL REPORT**

WorkOrder: HS18111007  
Lab ID: HS18111007-05  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: JHD
Percent Moisture	17.7		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

*8/12/18*

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-07-20181119-06-57  
 Collection Date: 19-Nov-2018 12:14

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-06  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270			Prep: SW3541 / 20-Nov-2018		Analyst: ACN
Acenaphthene	U		0.00061	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Anthracene	0.00075	JR	0.00061	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Benz(a)anthracene	0.0034	JR	0.0019	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Benzo(a)pyrene	0.0038	JR	0.0012	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Benzo(b)fluoranthene	0.0055		0.0015	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Benzo(g,h,i)perylene	0.0046		0.00085	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Benzo(k)fluoranthene	0.0032	JR	0.0011	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Chrysene	0.0057		0.00097	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Fluoranthene	0.0086		0.0013	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Indeno(1,2,3-cd)pyrene	0.0032	JR	0.00097	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Naphthalene	0.0010	JR	0.00073	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Phenanthrene	0.0084		0.0018	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Pyrene	0.0069		0.00073	0.0040	mg/Kg-dry	1	20-Nov-2018 22:27
Surr: 2-Fluorobiphenyl	80.5			43-125	%REC	1	20-Nov-2018 22:27
Surr: 4-Terphenyl-d14	94.7			32-125	%REC	1	20-Nov-2018 22:27
Surr: Nitrobenzene-d5	80.4			37-125	%REC	1	20-Nov-2018 22:27
<b>PCBS BY SW8082A</b>		Method: SW8082			Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	21-Nov-2018 12:07
Aroclor 1221	U		0.0068	0.020	mg/Kg-dry	1	21-Nov-2018 12:07
Aroclor 1232	U		0.0055	0.020	mg/Kg-dry	1	21-Nov-2018 12:07
Aroclor 1242	U		0.0072	0.020	mg/Kg-dry	1	21-Nov-2018 12:07
Aroclor 1248	U		0.0072	0.020	mg/Kg-dry	1	21-Nov-2018 12:07
Aroclor 1254	U		0.0057	0.020	mg/Kg-dry	1	21-Nov-2018 12:07
Aroclor 1260	20		0.97	4.1	mg/Kg-dry	200	21-Nov-2018 14:13
Surr: Decachlorobiphenyl	5.00	JS		54-143	%REC	200	21-Nov-2018 14:13
Surr: Decachlorobiphenyl	117			54-143	%REC	1	21-Nov-2018 12:07
Surr: Tetrachloro-m-xylene	80.5			50-140	%REC	1	21-Nov-2018 12:07
Surr: Tetrachloro-m-xylene	39.0	JS		50-140	%REC	200	21-Nov-2018 14:13
<b>METALS BY SW6020A</b>		Method: SW6020			Prep: SW3050A / 20-Nov-2018		Analyst: JCJ
Arsenic	10.3		0.0806	0.576	mg/Kg-dry	1	21-Nov-2018 15:07
Cadmium	1.08		0.0311	0.576	mg/Kg-dry	1	21-Nov-2018 15:07
Cobalt	7.63		0.0173	0.576	mg/Kg-dry	1	21-Nov-2018 15:07
Iron	14,600		2.11	57.6	mg/Kg-dry	1	21-Nov-2018 15:07
Lead	96.4	JL	0.0150	0.576	mg/Kg-dry	1	21-Nov-2018 15:07
Manganese	1,300		4.95	57.6	mg/Kg-dry	100	21-Nov-2018 19:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD03-07-20181119-06-57  
Collection Date: 19-Nov-2018 12:14

**ANALYTICAL REPORT**  
WorkOrder: HS18111007  
Lab ID: HS18111007-06  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: JHD
Percent Moisture	18.1		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

*12/14/18*

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-08-20181119-24-56  
 Collection Date: 19-Nov-2018 16:00

**ANALYTICAL REPORT**

WorkOrder: HS18111007  
 Lab ID: HS18111007-07  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270			Prep: SW3541 / 20-Nov-2018		Analyst: ACN
Acenaphthene	U		0.00058	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Acenaphthylene	U		0.0012	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Anthracene	U		0.00058	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Benz(a)anthracene	U		0.0018	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Benzo(a)pyrene	U		0.0012	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Benzo(b)fluoranthene	0.0018	JJP	0.0014	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Benzo(g,h,i)perylene	0.0016	JJP	0.00081	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Benzo(k)fluoranthene	U		0.0010	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Chrysene	0.0015	JJP	0.00092	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Dibenz(a,h)anthracene	U		0.0018	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Fluoranthene	U		0.0013	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Fluorene	U		0.0013	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Indeno(1,2,3-cd)pyrene	0.0014	JJP	0.00092	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Naphthalene	U		0.00069	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Phenanthrene	U		0.0017	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Pyrene	0.0011	JJP	0.00069	0.0038	mg/Kg-dry	1	20-Nov-2018 22:47
Surr: 2-Fluorobiphenyl	77.9			43-125	%REC	1	20-Nov-2018 22:47
Surr: 4-Terphenyl-d14	93.5			32-125	%REC	1	20-Nov-2018 22:47
Surr: Nitrobenzene-d5	79.4			37-125	%REC	1	20-Nov-2018 22:47
<b>PCBS BY SW8082A</b>		Method: SW8082			Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA
Aroclor 1016	U		0.0049	0.019	mg/Kg-dry	1	21-Nov-2018 12:23
Aroclor 1221	U		0.0065	0.019	mg/Kg-dry	1	21-Nov-2018 12:23
Aroclor 1232	U		0.0052	0.019	mg/Kg-dry	1	21-Nov-2018 12:23
Aroclor 1242	U		0.0068	0.019	mg/Kg-dry	1	21-Nov-2018 12:23
Aroclor 1248	U		0.0068	0.019	mg/Kg-dry	1	21-Nov-2018 12:23
Aroclor 1254	U		0.0054	0.019	mg/Kg-dry	1	21-Nov-2018 12:23
Aroclor 1260	0.72	JH	0.023	0.097	mg/Kg-dry	5	21-Nov-2018 14:29
Surr: Decachlorobiphenyl	87.0	J		54-143	%REC	5	21-Nov-2018 14:29
Surr: Decachlorobiphenyl	94.1			54-143	%REC	1	21-Nov-2018 12:23
Surr: Tetrachloro-m-xylene	96.3			50-140	%REC	1	21-Nov-2018 12:23
Surr: Tetrachloro-m-xylene	82.7	J		50-140	%REC	5	21-Nov-2018 14:29
<b>METALS BY SW6020A</b>		Method: SW6020			Prep: SW3050A / 20-Nov-2018		Analyst: JCJ
Arsenic	4.24		0.0762	0.544	mg/Kg-dry	1	21-Nov-2018 14:41
Cadmium	0.260	JJP	0.0294	0.544	mg/Kg-dry	1	21-Nov-2018 14:41
Cobalt	4.16		0.0163	0.544	mg/Kg-dry	1	21-Nov-2018 14:41
Iron	8,350		1.99	54.4	mg/Kg-dry	1	21-Nov-2018 14:41
Lead	8.50	JL	0.0141	0.544	mg/Kg-dry	1	21-Nov-2018 14:41
Manganese	841		4.68	54.4	mg/Kg-dry	100	21-Nov-2018 18:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD03-08-20181119-24-56  
Collection Date: 19-Nov-2018 16:00

**ANALYTICAL REPORT**  
WorkOrder: HS18111007  
Lab ID: HS18111007-07  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: JHD
Percent Moisture	13.7		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD05-04A-05-20181119-06-56  
 Collection Date: 19-Nov-2018 11:58

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-08  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270			Prep: SW3541 / 20-Nov-2018		Analyst: ACN
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Anthracene	0.0020	JR	0.00065	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Benz(a)anthracene	0.0083		0.0021	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Benzo(a)pyrene	0.0096		0.0013	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Benzo(b)fluoranthene	0.011		0.0016	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Benzo(g,h,i)perylene	0.0067		0.00091	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Benzo(k)fluoranthene	0.0051		0.0012	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Chrysene	0.015		0.0010	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Fluoranthene	0.014		0.0014	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Fluorene	0.0022	JR	0.0014	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Indeno(1,2,3-cd)pyrene	0.0066		0.0010	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Naphthalene	0.0028	JR	0.00078	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Phenanthrene	0.017		0.0019	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Pyrene	0.017		0.00078	0.0043	mg/Kg-dry	1	20-Nov-2018 23:07
Surr: 2-Fluorobiphenyl	88.8			43-125	%REC	1	20-Nov-2018 23:07
Surr: 4-Terphenyl-d14	99.5			32-125	%REC	1	20-Nov-2018 23:07
Surr: Nitrobenzene-d5	87.4			37-125	%REC	1	20-Nov-2018 23:07
<b>PCBS BY SW8082A</b>		Method: SW8082			Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	21-Nov-2018 12:38
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	21-Nov-2018 12:38
Aroclor 1232	U		0.0058	0.022	mg/Kg-dry	1	21-Nov-2018 12:38
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	21-Nov-2018 12:38
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	21-Nov-2018 12:38
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	21-Nov-2018 12:38
Aroclor 1260	0.19		0.0052	0.022	mg/Kg-dry	1	21-Nov-2018 12:38
Surr: Decachlorobiphenyl	95.2			54-143	%REC	1	21-Nov-2018 12:38
Surr: Tetrachloro-m-xylene	89.3			50-140	%REC	1	21-Nov-2018 12:38
<b>METALS BY SW6020A</b>		Method: SW6020			Prep: SW3050A / 20-Nov-2018		Analyst: JCJ
Arsenic	6.90		0.0878	0.627	mg/Kg-dry	1	21-Nov-2018 15:09
Cadmium	0.641		0.0339	0.627	mg/Kg-dry	1	21-Nov-2018 15:09
Cobalt	9.96		0.0188	0.627	mg/Kg-dry	1	21-Nov-2018 15:09
Iron	18,400		2.29	62.7	mg/Kg-dry	1	21-Nov-2018 15:09
Lead	34.4	JL	0.0163	0.627	mg/Kg-dry	1	21-Nov-2018 15:09
Manganese	2,010		5.39	62.7	mg/Kg-dry	100	21-Nov-2018 19:12
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216					Analyst: JHD
Percent Moisture	23.1		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD02-08-20181119-12-56  
 Collection Date: 19-Nov-2018 12:07

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-09  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 20-Nov-2018		Analyst: ACN	
Acenaphthene	U		0.00064	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Anthracene	0.0011	JR	0.00064	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Benz(a)anthracene	0.0028	JR	0.0020	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Benzo(a)pyrene	0.0029	JR	0.0013	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Benzo(b)fluoranthene	0.0080		0.0015	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Benzo(g,h,i)perylene	0.0046		0.00089	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Benzo(k)fluoranthene	0.0023	JR	0.0011	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Chrysene	0.0053		0.0010	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Fluoranthene	0.0038	JR	0.0014	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Indeno(1,2,3-cd)pyrene	0.0044		0.0010	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Naphthalene	0.00094	JR	0.00077	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Phenanthrene	0.0031	JR	0.0019	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Pyrene	0.0042		0.00077	0.0042	mg/Kg-dry	1	20-Nov-2018 23:26
Surr: 2-Fluorobiphenyl	86.6			43-125	%REC	1	20-Nov-2018 23:26
Surr: 4-Terphenyl-d14	100			32-125	%REC	1	20-Nov-2018 23:26
Surr: Nitrobenzene-d5	85.7			37-125	%REC	1	20-Nov-2018 23:26
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0054	0.021	mg/Kg-dry	1	21-Nov-2018 12:54
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	21-Nov-2018 12:54
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	21-Nov-2018 12:54
Aroclor 1242	U		0.0075	0.021	mg/Kg-dry	1	21-Nov-2018 12:54
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	21-Nov-2018 12:54
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	21-Nov-2018 12:54
Aroclor 1260	0.18		0.0051	0.021	mg/Kg-dry	1	21-Nov-2018 12:54
Surr: Decachlorobiphenyl	101			54-143	%REC	1	21-Nov-2018 12:54
Surr: Tetrachloro-m-xylene	87.3			50-140	%REC	1	21-Nov-2018 12:54
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 20-Nov-2018		Analyst: JCJ	
Arsenic	28.1		0.0851	0.608	mg/Kg-dry	1	21-Nov-2018 15:11
Cadmium	0.437	JR	0.0328	0.608	mg/Kg-dry	1	21-Nov-2018 15:11
Cobalt	6.60		0.0182	0.608	mg/Kg-dry	1	21-Nov-2018 15:11
Iron	12,800		2.22	60.8	mg/Kg-dry	1	21-Nov-2018 15:11
Lead	21.2	JL	0.0158	0.608	mg/Kg-dry	1	21-Nov-2018 15:11
Manganese	1,420		5.23	60.8	mg/Kg-dry	100	21-Nov-2018 19:15
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: JHD	
Percent Moisture	21.9		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-05-20181119-06-56  
 Collection Date: 19-Nov-2018 12:21

**ANALYTICAL REPORT**  
 WorkOrder: HS18111007  
 Lab ID: HS18111007-10  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 20-Nov-2018		Analyst: ACN
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Benzo(a)pyrene	0.0014	JQ	0.0013	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Benzo(b)fluoranthene	0.0018	JQ	0.0016	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Benzo(g,h,i)perylene	0.0012	JQ	0.00091	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Benzo(k)fluoranthene	U		0.0012	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Chrysene	0.0017	JQ	0.0010	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Fluoranthene	0.0016	JQ	0.0014	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Indeno(1,2,3-cd)pyrene	0.0011	JQ	0.0010	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Phenanthrene	U		0.0019	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Pyrene	0.0019	JQ	0.00078	0.0043	mg/Kg-dry	1	20-Nov-2018 23:46
Surr: 2-Fluorobiphenyl	88.6			43-125	%REC	1	20-Nov-2018 23:46
Surr: 4-Terphenyl-d14	96.2			32-125	%REC	1	20-Nov-2018 23:46
Surr: Nitrobenzene-d5	85.5			37-125	%REC	1	20-Nov-2018 23:46
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 20-Nov-2018		Analyst: JBA
Aroclor 1016	U		0.0054	0.022	mg/Kg-dry	1	21-Nov-2018 08:42
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	21-Nov-2018 08:42
Aroclor 1232	U		0.0058	0.022	mg/Kg-dry	1	21-Nov-2018 08:42
Aroclor 1242	U		0.0076	0.022	mg/Kg-dry	1	21-Nov-2018 08:42
Aroclor 1248	U		0.0076	0.022	mg/Kg-dry	1	21-Nov-2018 08:42
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	21-Nov-2018 08:42
Aroclor 1260	0.45		0.010	0.043	mg/Kg-dry	2	21-Nov-2018 13:10
Surr: Decachlorobiphenyl	101			54-143	%REC	2	21-Nov-2018 13:10
Surr: Decachlorobiphenyl	101			54-143	%REC	1	21-Nov-2018 08:42
Surr: Tetrachloro-m-xylene	78.7			50-140	%REC	1	21-Nov-2018 08:42
Surr: Tetrachloro-m-xylene	75.0			50-140	%REC	2	21-Nov-2018 13:10
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 20-Nov-2018		Analyst: JCJ
Arsenic	10.1		0.0850	0.607	mg/Kg-dry	1	21-Nov-2018 15:13
Cadmium	0.455	JQ	0.0328	0.607	mg/Kg-dry	1	21-Nov-2018 15:13
Cobalt	10.8		0.0182	0.607	mg/Kg-dry	1	21-Nov-2018 15:13
Iron	20,900		2.22	60.7	mg/Kg-dry	1	21-Nov-2018 15:13
Lead	21.7	JL	0.0158	0.607	mg/Kg-dry	1	21-Nov-2018 15:13
Manganese	1,960		5.22	60.7	mg/Kg-dry	100	21-Nov-2018 19:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD03-05-20181119-06-56  
Collection Date: 19-Nov-2018 12:21

**ANALYTICAL REPORT**

WorkOrder: HS18111007  
Lab ID: HS18111007-10  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: JHD
Percent Moisture	22.9		0.0100	0.0100	wt%	1	20-Nov-2018 18:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

8/12/18

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18111105

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111105; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD03-09NSEW-20181120-06-56</u>	<u>FJD03-10NW-20181120-24-56</u>	<u>FJD06-01-20181120-12-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 26, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided or were diluted out. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results for the following analyte was above acceptance limits ( $\leq 25$ ):

SAMPLE ID	ANALYTE	%D	QUALIFIER FLAG
FJD03-10NW-20181120-24-56	Aroclor 1260	26.5	JK

Some PCB samples were analyzed at a dilution for some compounds. Reporting limits for these compounds in these samples were elevated as a result of the dilutions performed.

11. Laboratory Contact:

The laboratory was contacted on December 13, 2018 regarding an incomplete method blank form. An acceptable response was received on December 24, 2018.

12. Overall Assessment:

The Aroclor 1260 result in one sample was estimated due to the high %D between the column results.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18111105

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111105; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD03-09NSEW-20181120-06-56</u>	<u>FJD03-10NW-20181120-24-56</u>	<u>FJD06-01-20181120-12-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 14, 2018



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD03-09NSEW-20181120-06-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD03-09NSEW-20181120-06-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18111105

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111105; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD03-09NSEW-20181120-06-56</u>	<u>FJD03-10NW-20181120-24-56</u>	<u>FJD06-01-20181120-12-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 26, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution for the solid matrix for ICP metals. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Some ICP metals analytes in some samples were analyzed at a 10, 50, 100, or 200-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

The laboratory was contacted on December 13, 2018 regarding the lack of a sequence log and prep page. An acceptable response was received on December 24, 2018.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-09NSEW-20181120-06-56  
 Collection Date: 20-Nov-2018 13:07

**ANALYTICAL REPORT**

WorkOrder: HS18111105  
 Lab ID: HS18111105-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 21-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00061	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Anthracene	U		0.00061	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Benz(a)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Benzo(a)pyrene	0.0038	JQ	0.0012	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Benzo(b)fluoranthene	0.0031	JQ	0.0015	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Benzo(g,h,i)perylene	0.0021	JQ	0.00085	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Benzo(k)fluoranthene	U		0.0011	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Chrysene	0.0023	JQ	0.00097	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Fluoranthene	0.0027	JQ	0.0013	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Indeno(1,2,3-cd)pyrene	U		0.00097	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Naphthalene	U		0.00073	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Phenanthrene	U		0.0018	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Pyrene	0.0030	JQ	0.00073	0.0040	mg/Kg-dry	1	21-Nov-2018 18:34
Surr: 2-Fluorobiphenyl	70.6			43-125	%REC	1	21-Nov-2018 18:34
Surr: 4-Terphenyl-d14	94.2			32-125	%REC	1	21-Nov-2018 18:34
Surr: Nitrobenzene-d5	69.8			37-125	%REC	1	21-Nov-2018 18:34
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 21-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	26-Nov-2018 10:11
Aroclor 1221	U		0.0068	0.020	mg/Kg-dry	1	26-Nov-2018 10:11
Aroclor 1232	U		0.0055	0.020	mg/Kg-dry	1	26-Nov-2018 10:11
Aroclor 1242	U		0.0072	0.020	mg/Kg-dry	1	26-Nov-2018 10:11
Aroclor 1248	U		0.0072	0.020	mg/Kg-dry	1	26-Nov-2018 10:11
Aroclor 1254	U		0.0057	0.020	mg/Kg-dry	1	26-Nov-2018 10:11
Aroclor 1260	1.7		0.048	0.20	mg/Kg-dry	10	26-Nov-2018 12:37
Surr: Decachlorobiphenyl	94.5	J		54-143	%REC	10	26-Nov-2018 12:37
Surr: Decachlorobiphenyl	82.1			54-143	%REC	1	26-Nov-2018 10:11
Surr: Tetrachloro-m-xylene	97.2			50-140	%REC	1	26-Nov-2018 10:11
Surr: Tetrachloro-m-xylene	94.5	J		50-140	%REC	10	26-Nov-2018 12:37
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 21-Nov-2018		Analyst: JCJ	
Arsenic	11.1		0.0788	0.563	mg/Kg-dry	1	27-Nov-2018 01:36
Cadmium	0.424	JQ	0.0304	0.563	mg/Kg-dry	1	27-Nov-2018 01:36
Cobalt	7.04		0.0169	0.563	mg/Kg-dry	1	27-Nov-2018 01:36
Iron	13,300		2.06	56.3	mg/Kg-dry	1	27-Nov-2018 01:36
Lead	22.0		0.146	5.63	mg/Kg-dry	10	30-Nov-2018 18:25
Manganese	965		2.42	28.1	mg/Kg-dry	50	27-Nov-2018 15:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD03-09NSEW-20181120-06-56  
Collection Date: 20-Nov-2018 13:07

**ANALYTICAL REPORT**

WorkOrder: HS18111105  
Lab ID: HS18111105-01  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: JHD
Percent Moisture	17.5		0.0100	0.0100	wt%	1	21-Nov-2018 12:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

8/12/18

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-10NW-20181120-24-56  
 Collection Date: 20-Nov-2018 11:50

**ANALYTICAL REPORT**  
 WorkOrder: HS18111105  
 Lab ID: HS18111105-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270			Prep: SW3541 / 21-Nov-2018		Analyst: GEY
Acenaphthene	U		0.00064	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Anthracene	U		0.00064	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Benz(a)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Benzo(a)pyrene	0.0017	JS	0.0013	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Benzo(b)fluoranthene	0.0032	JS	0.0015	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Benzo(g,h,i)perylene	0.0033	JS	0.00089	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Benzo(k)fluoranthene	0.0034	JS	0.0011	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Chrysene	U		0.0010	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Fluoranthene	0.0019	JS	0.0014	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Indeno(1,2,3-cd)pyrene	0.0011	JS	0.0010	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Naphthalene	U		0.00076	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Phenanthrene	0.0024	JS	0.0019	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Pyrene	0.0032	JS	0.00076	0.0042	mg/Kg-dry	1	21-Nov-2018 19:33
Surr: 2-Fluorobiphenyl	73.9			43-125	%REC	1	21-Nov-2018 19:33
Surr: 4-Terphenyl-d14	109			32-125	%REC	1	21-Nov-2018 19:33
Surr: Nitrobenzene-d5	70.1			37-125	%REC	1	21-Nov-2018 19:33
<b>PCBS BY SW8082A</b>		Method: SW8082			Prep: SW3541/3665A / 21-Nov-2018		Analyst: JBA
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	26-Nov-2018 10:28
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	26-Nov-2018 10:28
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	26-Nov-2018 10:28
Aroclor 1242	U		0.0075	0.021	mg/Kg-dry	1	26-Nov-2018 10:28
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	26-Nov-2018 10:28
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	26-Nov-2018 10:28
Aroclor 1260	29	JK	1.0	4.2	mg/Kg-dry	200	26-Nov-2018 12:53
Surr: Decachlorobiphenyl	0	JS		54-143	%REC	200	26-Nov-2018 12:53
Surr: Decachlorobiphenyl	96.4			54-143	%REC	1	26-Nov-2018 10:28
Surr: Tetrachloro-m-xylene	86.2			50-140	%REC	1	26-Nov-2018 10:28
Surr: Tetrachloro-m-xylene	35.0	JS		50-140	%REC	200	26-Nov-2018 12:53
<b>METALS BY SW6020A</b>		Method: SW6020			Prep: SW3050A / 21-Nov-2018		Analyst: JCJ
Arsenic	10.7		0.0860	0.615	mg/Kg-dry	1	27-Nov-2018 01:38
Cadmium	0.590	JS	0.0332	0.615	mg/Kg-dry	1	27-Nov-2018 01:38
Cobalt	22.8		0.0184	0.615	mg/Kg-dry	1	27-Nov-2018 01:38
Iron	21,200		2.25	61.5	mg/Kg-dry	1	27-Nov-2018 01:38
Lead	130		0.160	6.15	mg/Kg-dry	10	30-Nov-2018 18:27
Manganese	2,970		10.6	123	mg/Kg-dry	200	27-Nov-2018 15:38

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD03-10NW-20181120-24-56  
Collection Date: 20-Nov-2018 11:50

**ANALYTICAL REPORT**

WorkOrder: HS18111105  
Lab ID: HS18111105-02  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: JHD
Percent Moisture	21.4		0.0100	0.0100	wt%	1	21-Nov-2018 12:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

8/12/14/18

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD06-01-20181120-12-56  
 Collection Date: 20-Nov-2018 11:45

## ANALYTICAL REPORT

WorkOrder: HS18111105  
 Lab ID: HS18111105-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 21-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Benzo(a)pyrene	U		0.0013	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Benzo(b)fluoranthene	0.0017	✓ JQ	0.0016	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Benzo(g,h,i)perylene	0.0016	✓ JQ	0.00091	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Benzo(k)fluoranthene	U		0.0012	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Chrysene	0.0012	✓ JQ	0.0010	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Fluoranthene	U		0.0014	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Indeno(1,2,3-cd)pyrene	0.0013	✓ JQ	0.0010	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Phenanthrene	U		0.0020	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Pyrene	0.0012	✓ JQ	0.00078	0.0043	mg/Kg-dry	1	21-Nov-2018 19:52
Surr: 2-Fluorobiphenyl	66.6			43-125	%REC	1	21-Nov-2018 19:52
Surr: 4-Terphenyl-d14	87.4			32-125	%REC	1	21-Nov-2018 19:52
Surr: Nitrobenzene-d5	62.5			37-125	%REC	1	21-Nov-2018 19:52
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 21-Nov-2018		Analyst: JBA	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	26-Nov-2018 10:44
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	26-Nov-2018 10:44
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	26-Nov-2018 10:44
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	26-Nov-2018 10:44
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	26-Nov-2018 10:44
Aroclor 1254	U		0.0062	0.022	mg/Kg-dry	1	26-Nov-2018 10:44
Aroclor 1260	U		0.0052	0.022	mg/Kg-dry	1	26-Nov-2018 10:44
Surr: Decachlorobiphenyl	85.4			54-143	%REC	1	26-Nov-2018 10:44
Surr: Tetrachloro-m-xylene	95.4			50-140	%REC	1	26-Nov-2018 10:44
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 21-Nov-2018		Analyst: JCJ	
Arsenic	5.70		0.0842	0.602	mg/Kg-dry	1	27-Nov-2018 01:40
Cadmium	0.515	✓ JQ	0.0325	0.602	mg/Kg-dry	1	27-Nov-2018 01:40
Cobalt	12.3		0.0180	0.602	mg/Kg-dry	1	27-Nov-2018 01:40
Iron	19,600		2.20	60.2	mg/Kg-dry	1	27-Nov-2018 01:40
Lead	34.1		0.156	6.02	mg/Kg-dry	10	30-Nov-2018 18:29
Manganese	1,710		5.17	60.2	mg/Kg-dry	100	27-Nov-2018 15:40
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: JHD	
Percent Moisture	23.7		0.0100	0.0100	wt%	1	21-Nov-2018 12:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18111414

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111414; Frank J. Doyle Salvage Removal Action. Nine samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD02-06-20181128-12-56</u>	<u>FJD02-10S-20181128-18-56</u>	<u>FJD03-03-20181128-12-56</u>
<u>FJD03-05-20181128-12-56</u>	<u>FJD03-07-20181128-12-56</u>	<u>FJD03-07-20181128-12-57</u>
<u>FJD03-09NSEW-20181128-12-56</u>	<u>FJD03-10NW-20181128-30-56</u>	<u>FJD07-01-20181128-12-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 14, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided or were diluted out. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD03-10NW-20181128-30-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.



8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD03-10NW-20181128-30-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD03-07-20181128-12-56/FJD03-07-20181128-12-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18111414

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111414; Frank J. Doyle Salvage Removal Action. Nine samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD02-06-20181128-12-56</u>	<u>FJD02-10S-20181128-18-56</u>	<u>FJD03-03-20181128-12-56</u>
<u>FJD03-05-20181128-12-56</u>	<u>FJD03-07-20181128-12-56</u>	<u>FJD03-07-20181128-12-57</u>
<u>FJD03-09NSEW-20181128-12-56</u>	<u>FJD03-10NW-20181128-30-56</u>	<u>FJD07-01-20181128-12-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 14, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD03-10NW-20181128-30-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD03-07-20181128-12-56/FJD03-07-20181128-12-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met with the following exception:

FIELD DUPLICATE SAMPLE PAIR	ANALYTE	MATRIX	RPD	AFFECTED SAMPLES	QUALIFIER FLAG
FJD03-07-20181128-12-56/ FJD03-07-20181128-12-57	Phenanthrene	Solid	*	FJD03-07-20181128-12-56/ FJD03-07-20181128-12-57	JK/UJK

\*One result ND and one result >5x RL

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD03-10NW-20181128-30-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified “J” by the laboratory are qualified “JQ” to indicate that the result is less than the RL but greater than the method detection limit (MDL).

One sample was analyzed at a dilution for some compounds. The RL for these compounds in this sample were elevated as a result of the dilutions performed.

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

The phenanthrene result in the field duplicate pair was estimated due to poor precision.

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18111414

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18111414; Frank J. Doyle Salvage Removal Action. Nine samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD02-06-20181128-12-56</u>	<u>FJD02-10S-20181128-18-56</u>	<u>FJD03-03-20181128-12-56</u>
<u>FJD03-05-20181128-12-56</u>	<u>FJD03-07-20181128-12-56</u>	<u>FJD03-07-20181128-12-57</u>
<u>FJD03-09NSEW-20181128-12-56</u>	<u>FJD03-10NW-20181128-30-56</u>	<u>FJD07-01-20181128-12-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE December 26, 2018

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample FJD03-10NW-20181128-30-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. QC criteria are that the RPD values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD03-07-20181128-12-56/FJD03-07-20181128-12-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met with the following exception:

FIELD DUPLICATE SAMPLE PAIR	ANALYTE	MATRIX	RPD	AFFECTED SAMPLES	QUALIFIER FLAG
FJD03-07-20181128-12-56/ FJD03-07-20181128-12-57	Iron	Solid	114	FJD03-07-20181128-12-56/ FJD03-07-20181128-12-57	JK

## 10. Spiked Sample Analysis:

Sample FJD03-10NW-20181128-30-56 underwent MS/MSD analysis for ICP metals for the solid matrix. The spike recoveries for the following analytes were outside of the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more:

ANALYTE	MATRIX	%R/%R	AFFECTED SAMPLES	QUALIFIER FLAG
Cobalt	Solid	70.1/OK	All	JL

The post digestion spike recoveries were acceptable. No further qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample FJD03-10NW-20181128-30-56 underwent serial dilution for the solid matrix for ICP metals. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 5 or 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

### 13. Laboratory Contact

The laboratory was contacted on December 13, 2018 regarding the lack of a sequence log, prep page, and raw data. An acceptable response was received on December 21, 2018.

### 14. Overall Assessment:

The cobalt result in all samples was qualified due to low MS recovery.

The iron result in the field duplicate pair was estimated due to poor precision.

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD02-06-20181128-12-56  
 Collection Date: 28-Nov-2018 12:55

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 29-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Anthracene	0.0046		0.00062	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Benz(a)anthracene	0.0087		0.0020	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Benzo(a)pyrene	0.0054		0.0012	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Benzo(b)fluoranthene	0.011		0.0015	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Benzo(g,h,i)perylene	0.013		0.00086	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Benzo(k)fluoranthene	0.0046		0.0011	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Chrysene	0.011		0.00098	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Fluoranthene	0.0066		0.0014	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Indeno(1,2,3-cd)pyrene	0.0061		0.00098	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Naphthalene	0.026		0.00074	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Phenanthrene	0.014		0.0018	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Pyrene	0.016		0.00074	0.0041	mg/Kg-dry	1	29-Nov-2018 20:38
Surr: 2-Fluorobiphenyl	74.6			43-125	%REC	1	29-Nov-2018 20:38
Surr: 4-Terphenyl-d14	98.9			32-125	%REC	1	29-Nov-2018 20:38
Surr: Nitrobenzene-d5	76.2			37-125	%REC	1	29-Nov-2018 20:38
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3655A / 29-Nov-2018		Analyst: JLJ	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	29-Nov-2018 23:42
Aroclor 1221	U		0.0069	0.021	mg/Kg-dry	1	29-Nov-2018 23:42
Aroclor 1232	U		0.0055	0.021	mg/Kg-dry	1	29-Nov-2018 23:42
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	29-Nov-2018 23:42
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	29-Nov-2018 23:42
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	29-Nov-2018 23:42
Aroclor 1260	U		0.0049	0.021	mg/Kg-dry	1	29-Nov-2018 23:42
Surr: Decachlorobiphenyl	132			54-143	%REC	1	29-Nov-2018 23:42
Surr: Tetrachloro-m-xylene	107			50-140	%REC	1	29-Nov-2018 23:42
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 29-Nov-2018		Analyst: JCJ	
Arsenic	44.9		0.398	2.84	mg/Kg-dry	5	30-Nov-2018 14:52
Cadmium	0.804	JL	0.153	2.84	mg/Kg-dry	5	30-Nov-2018 14:52
Cobalt	12.2	JL	0.0853	2.84	mg/Kg-dry	5	30-Nov-2018 14:52
Iron	21,300		10.4	284	mg/Kg-dry	5	30-Nov-2018 14:52
Lead	17.8		0.0739	2.84	mg/Kg-dry	5	30-Nov-2018 14:52
Manganese	1,900		4.89	56.8	mg/Kg-dry	100	30-Nov-2018 14:55
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	19.0		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD02-10S-20181128-18-56  
 Collection Date: 28-Nov-2018 12:48

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 29-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00060	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Acenaphthylene	0.083		0.0012	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Anthracene	U		0.00060	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Benz(a)anthracene	0.013		0.0019	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Benzo(a)pyrene	0.014		0.0012	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Benzo(b)fluoranthene	0.018		0.0014	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Benzo(g,h,i)perylene	0.017		0.00084	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Benzo(k)fluoranthene	0.0044		0.0011	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Chrysene	0.031		0.00096	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Dibenz(a,h)anthracene	0.0041		0.0019	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Fluoranthene	0.040		0.0013	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Fluorene	0.29		0.0013	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Indeno(1,2,3-cd)pyrene	0.015		0.00096	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Naphthalene	3.9		0.0072	0.040	mg/Kg-dry	10	30-Nov-2018 14:45
Phenanthrene	0.42		0.018	0.040	mg/Kg-dry	10	30-Nov-2018 14:45
Pyrene	0.044		0.00072	0.0040	mg/Kg-dry	1	29-Nov-2018 16:53
Surr: 2-Fluorobiphenyl	68.9			43-125	%REC	10	30-Nov-2018 14:45
Surr: 2-Fluorobiphenyl	61.5			43-125	%REC	1	29-Nov-2018 16:53
Surr: 4-Terphenyl-d14	101			32-125	%REC	1	29-Nov-2018 16:53
Surr: 4-Terphenyl-d14	85.9			32-125	%REC	10	30-Nov-2018 14:45
Surr: Nitrobenzene-d5	94.8			37-125	%REC	10	30-Nov-2018 14:45
Surr: Nitrobenzene-d5	78.8			37-125	%REC	1	29-Nov-2018 16:53
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 29-Nov-2018		Analyst: JJJ	
Aroclor 1016	U		0.0050	0.020	mg/Kg-dry	1	29-Nov-2018 23:57
Aroclor 1221	U		0.0067	0.020	mg/Kg-dry	1	29-Nov-2018 23:57
Aroclor 1232	U		0.0054	0.020	mg/Kg-dry	1	29-Nov-2018 23:57
Aroclor 1242	U		0.0071	0.020	mg/Kg-dry	1	29-Nov-2018 23:57
Aroclor 1248	U		0.0071	0.020	mg/Kg-dry	1	29-Nov-2018 23:57
Aroclor 1254	U		0.0056	0.020	mg/Kg-dry	1	29-Nov-2018 23:57
Aroclor 1260	U		0.0048	0.020	mg/Kg-dry	1	29-Nov-2018 23:57
Surr: Decachlorobiphenyl	130			54-143	%REC	1	29-Nov-2018 23:57
Surr: Tetrachloro-m-xylene	110			50-140	%REC	1	29-Nov-2018 23:57
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 29-Nov-2018		Analyst: JCJ	
Arsenic	9.31		0.403	2.88	mg/Kg-dry	5	30-Nov-2018 14:54
Cadmium	0.683	JJQ	0.155	2.88	mg/Kg-dry	5	30-Nov-2018 14:54
Cobalt	12.2	JL	0.0863	2.88	mg/Kg-dry	5	30-Nov-2018 14:54
Iron	18,000		10.5	288	mg/Kg-dry	5	30-Nov-2018 14:54
Lead	15.8		0.0748	2.88	mg/Kg-dry	5	30-Nov-2018 14:54
Manganese	1,450		4.95	57.5	mg/Kg-dry	100	30-Nov-2018 14:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD02-10S-20181128-18-56  
Collection Date: 28-Nov-2018 12:48

**ANALYTICAL REPORT**  
WorkOrder: HS18111414  
Lab ID: HS18111414-02  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: DFF
Percent Moisture	17.0		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-03-20181128-12-56  
 Collection Date: 28-Nov-2018 12:44

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 29-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00064	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Anthracene	U		0.00064	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Benz(a)anthracene	0.0046		0.0021	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Benzo(a)pyrene	0.0050		0.0013	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Benzo(b)fluoranthene	0.011		0.0015	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Benzo(g,h,i)perylene	0.0080		0.00090	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Benzo(k)fluoranthene	0.0038	JJP	0.0012	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Chrysene	0.0051		0.0010	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Dibenz(a,h)anthracene	0.0028	JJP	0.0021	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Fluoranthene	0.0045		0.0014	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Indeno(1,2,3-cd)pyrene	0.0043		0.0010	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Naphthalene	0.0011	JJP	0.00077	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Phenanthrene	0.0025	JJP	0.0019	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Pyrene	0.0059		0.00077	0.0042	mg/Kg-dry	1	30-Nov-2018 15:05
Surr: 2-Fluorobiphenyl	73.1			43-125	%REC	1	30-Nov-2018 15:05
Surr: 4-Terphenyl-d14	73.2			32-125	%REC	1	30-Nov-2018 15:05
Surr: Nitrobenzene-d5	71.5			37-125	%REC	1	30-Nov-2018 15:05
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 29-Nov-2018		Analyst: JLJ	
Aroclor 1016	U		0.0054	0.021	mg/Kg-dry	1	30-Nov-2018 00:13
Aroclor 1221	U		0.0072	0.021	mg/Kg-dry	1	30-Nov-2018 00:13
Aroclor 1232	U		0.0058	0.021	mg/Kg-dry	1	30-Nov-2018 00:13
Aroclor 1242	U		0.0076	0.021	mg/Kg-dry	1	30-Nov-2018 00:13
Aroclor 1248	U		0.0076	0.021	mg/Kg-dry	1	30-Nov-2018 00:13
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	30-Nov-2018 00:13
Aroclor 1260	U		0.0051	0.021	mg/Kg-dry	1	30-Nov-2018 00:13
Surr: Decachlorobiphenyl	136			54-143	%REC	1	30-Nov-2018 00:13
Surr: Tetrachloro-m-xylene	106			50-140	%REC	1	30-Nov-2018 00:13
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 29-Nov-2018		Analyst: JCJ	
Arsenic	11.3		0.429	3.06	mg/Kg-dry	5	30-Nov-2018 14:56
Cadmium	0.860	JJP	0.165	3.06	mg/Kg-dry	5	30-Nov-2018 14:56
Cobalt	15.3	JL	0.0919	3.06	mg/Kg-dry	5	30-Nov-2018 14:56
Iron	26,400		11.2	306	mg/Kg-dry	5	30-Nov-2018 14:56
Lead	27.1		0.0797	3.06	mg/Kg-dry	5	30-Nov-2018 14:56
Manganese	2,020		5.27	61.3	mg/Kg-dry	100	30-Nov-2018 15:00
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	22.4		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-05-20181128-12-56  
 Collection Date: 28-Nov-2018 12:40

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 29-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00063	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Acenaphthylene	U		0.0013	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Anthracene	U		0.00063	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Benz(a)anthracene	0.0020	JJP	0.0020	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Benzo(a)pyrene	0.0017	JJP	0.0013	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Benzo(b)fluoranthene	0.0022	JJP	0.0015	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Benzo(g,h,i)perylene	U		0.00088	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Chrysene	0.0028	JJP	0.0010	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Naphthalene	0.0017	JJP	0.00075	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Phenanthrene	0.0051		0.0019	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Pyrene	0.0034	JJP	0.00075	0.0041	mg/Kg-dry	1	29-Nov-2018 21:18
Surr: 2-Fluorobiphenyl	71.2			43-125	%REC	1	29-Nov-2018 21:18
Surr: 4-Terphenyl-d14	98.0			32-125	%REC	1	29-Nov-2018 21:18
Surr: Nitrobenzene-d5	74.6			37-125	%REC	1	29-Nov-2018 21:18
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 29-Nov-2018		Analyst: JJJ	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	30-Nov-2018 00:29
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	30-Nov-2018 00:29
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	30-Nov-2018 00:29
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	30-Nov-2018 00:29
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	30-Nov-2018 00:29
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	30-Nov-2018 00:29
Aroclor 1260	U		0.0050	0.021	mg/Kg-dry	1	30-Nov-2018 00:29
Surr: Decachlorobiphenyl	138			54-143	%REC	1	30-Nov-2018 00:29
Surr: Tetrachloro-m-xylene	110			50-140	%REC	1	30-Nov-2018 00:29
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3550A / 29-Nov-2018		Analyst: JCJ	
Arsenic	7.20		0.413	2.95	mg/Kg-dry	5	30-Nov-2018 14:58
Cadmium	0.733	JJP	0.159	2.95	mg/Kg-dry	5	30-Nov-2018 14:58
Cobalt	11.7	JL	0.0884	2.95	mg/Kg-dry	5	30-Nov-2018 14:58
Iron	22,000		10.8	295	mg/Kg-dry	5	30-Nov-2018 14:58
Lead	15.4		0.0766	2.95	mg/Kg-dry	5	30-Nov-2018 14:58
Manganese	1,620		5.07	58.9	mg/Kg-dry	100	30-Nov-2018 15:02
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	20.7		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-07-20181128-12-56  
 Collection Date: 28-Nov-2018 12:33

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-05  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 29-Nov-2018		Analyst: GEY
Acenaphthene	U		0.00061	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Anthracene	U		0.00061	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Benz(a)anthracene	0.0020	+ JQ	0.0020	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Benzo(a)pyrene	U		0.0012	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Benzo(b)fluoranthene	U		0.0015	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Benzo(g,h,i)perylene	U		0.00086	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Benzo(k)fluoranthene	U		0.0011	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Chrysene	0.0022	+ JQ	0.00098	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Dibenz(a,h)anthracene	U		0.0020	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Fluoranthene	U		0.0013	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Indeno(1,2,3-cd)pyrene	U		0.00098	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Naphthalene	0.0028	+ JQ	0.00074	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Phenanthrene	U	UJK	0.0018	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Pyrene	0.016		0.00074	0.0040	mg/Kg-dry	1	29-Nov-2018 18:14
Surr: 2-Fluorobiphenyl	52.5			43-125	%REC	1	29-Nov-2018 18:14
Surr: 4-Terphenyl-d14	105			32-125	%REC	1	29-Nov-2018 18:14
Surr: Nitrobenzene-d5	55.2			37-125	%REC	1	29-Nov-2018 18:14
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 29-Nov-2018		Analyst: JLJ
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	30-Nov-2018 00:45
Aroclor 1221	U		0.0069	0.020	mg/Kg-dry	1	30-Nov-2018 00:45
Aroclor 1232	U		0.0055	0.020	mg/Kg-dry	1	30-Nov-2018 00:45
Aroclor 1242	U		0.0072	0.020	mg/Kg-dry	1	30-Nov-2018 00:45
Aroclor 1248	U		0.0072	0.020	mg/Kg-dry	1	30-Nov-2018 00:45
Aroclor 1254	U		0.0058	0.020	mg/Kg-dry	1	30-Nov-2018 00:45
Aroclor 1260	0.024		0.0049	0.020	mg/Kg-dry	1	30-Nov-2018 00:45
Surr: Decachlorobiphenyl	126			54-143	%REC	1	30-Nov-2018 00:45
Surr: Tetrachloro-m-xylene	92.1			50-140	%REC	1	30-Nov-2018 00:45
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 29-Nov-2018		Analyst: JCJ
Arsenic	10.0		0.404	2.88	mg/Kg-dry	5	30-Nov-2018 15:00
Cadmium	1.21	+ JQ	0.156	2.88	mg/Kg-dry	5	30-Nov-2018 15:00
Cobalt	9.14	JL	0.0865	2.88	mg/Kg-dry	5	30-Nov-2018 15:00
Iron	46,900	JY	10.6	288	mg/Kg-dry	5	30-Nov-2018 15:00
Lead	51.7		0.0750	2.88	mg/Kg-dry	5	30-Nov-2018 15:00
Manganese	1,020		2.48	28.8	mg/Kg-dry	50	30-Nov-2018 15:04
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	18.6		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-07-20181128-12-57  
 Collection Date: 28-Nov-2018 12:33

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-06  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 29-Nov-2018		Analyst: GEY
Acenaphthene	0.0052		0.00061	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Acenaphthylene	0.0027	JQ	0.0012	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Anthracene	0.0076		0.00061	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Benz(a)anthracene	0.0039	JQ	0.0020	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Benzo(a)pyrene	0.0023	J	0.0012	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Benzo(b)fluoranthene	0.0019	J	0.0015	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Benzo(g,h,i)perylene	0.0038	J	0.00086	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Benzo(k)fluoranthene	U		0.0011	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Chrysene	0.0048		0.00098	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Dibenz(a,h)anthracene	U		0.0020	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Fluoranthene	0.0044		0.0013	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Fluorene	0.0087		0.0013	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Indeno(1,2,3-cd)pyrene	U		0.00098	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Naphthalene	0.0090		0.00074	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Phenanthrene	0.048	JK	0.0018	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Pyrene	0.015		0.00074	0.0040	mg/Kg-dry	1	30-Nov-2018 15:26
Surr: 2-Fluorobiphenyl	76.7			43-125	%REC	1	30-Nov-2018 15:26
Surr: 4-Terphenyl-d14	94.9			32-125	%REC	1	30-Nov-2018 15:26
Surr: Nitrobenzene-d5	78.2			37-125	%REC	1	30-Nov-2018 15:26
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 29-Nov-2018		Analyst: JLJ
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	30-Nov-2018 01:32
Aroclor 1221	U		0.0069	0.020	mg/Kg-dry	1	30-Nov-2018 01:32
Aroclor 1232	U		0.0055	0.020	mg/Kg-dry	1	30-Nov-2018 01:32
Aroclor 1242	U		0.0072	0.020	mg/Kg-dry	1	30-Nov-2018 01:32
Aroclor 1248	U		0.0072	0.020	mg/Kg-dry	1	30-Nov-2018 01:32
Aroclor 1254	U		0.0058	0.020	mg/Kg-dry	1	30-Nov-2018 01:32
Aroclor 1260	U		0.0049	0.020	mg/Kg-dry	1	30-Nov-2018 01:32
Surr: Decachlorobiphenyl	120			54-143	%REC	1	30-Nov-2018 01:32
Surr: Tetrachloro-m-xylene	95.2			50-140	%REC	1	30-Nov-2018 01:32
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 29-Nov-2018		Analyst: JCJ
Arsenic	6.59		0.404	2.89	mg/Kg-dry	5	30-Nov-2018 15:02
Cadmium	1.26	JQ	0.156	2.89	mg/Kg-dry	5	30-Nov-2018 15:02
Cobalt	7.33	JL	0.0866	2.89	mg/Kg-dry	5	30-Nov-2018 15:02
Iron	12,800	JK	10.6	289	mg/Kg-dry	5	30-Nov-2018 15:02
Lead	47.9		0.0751	2.89	mg/Kg-dry	5	30-Nov-2018 15:02
Manganese	1,030		2.48	28.9	mg/Kg-dry	50	30-Nov-2018 15:11
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	18.9		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-09NSEW-20181128-12-56  
 Collection Date: 28-Nov-2018 12:28

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-07  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 29-Nov-2018</b>		<b>Analyst: GEY</b>	
Acenaphthene	U		0.00058	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Acenaphthylene	U		0.0012	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Anthracene	0.0012	JJR	0.00058	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Benz(a)anthracene	0.0037	JJR	0.0019	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Benzo(a)pyrene	U		0.0012	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Benzo(b)fluoranthene	U		0.0014	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Benzo(g,h,i)perylene	0.0039		0.00081	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Benzo(k)fluoranthene	U		0.0010	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Chrysene	0.0031	JJR	0.00093	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Dibenz(a,h)anthracene	U		0.0019	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Fluoranthene	0.0040		0.0013	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Fluorene	U		0.0013	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Indeno(1,2,3-cd)pyrene	U		0.00093	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Naphthalene	0.010		0.00070	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Phenanthrene	0.0040		0.0017	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Pyrene	0.0068		0.00070	0.0038	mg/Kg-dry	1	30-Nov-2018 15:46
Surr: 2-Fluorobiphenyl	57.7			43-125	%REC	1	30-Nov-2018 15:46
Surr: 4-Terphenyl-d14	59.7			32-125	%REC	1	30-Nov-2018 15:46
Surr: Nitrobenzene-d5	66.6			37-125	%REC	1	30-Nov-2018 15:46
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 29-Nov-2018</b>		<b>Analyst: JLJ</b>	
Aroclor 1016	U		0.0049	0.020	mg/Kg-dry	1	30-Nov-2018 01:47
Aroclor 1221	U		0.0066	0.020	mg/Kg-dry	1	30-Nov-2018 01:47
Aroclor 1232	U		0.0053	0.020	mg/Kg-dry	1	30-Nov-2018 01:47
Aroclor 1242	U		0.0069	0.020	mg/Kg-dry	1	30-Nov-2018 01:47
Aroclor 1248	U		0.0069	0.020	mg/Kg-dry	1	30-Nov-2018 01:47
Aroclor 1254	U		0.0055	0.020	mg/Kg-dry	1	30-Nov-2018 01:47
Aroclor 1260	U		0.0047	0.020	mg/Kg-dry	1	30-Nov-2018 01:47
Surr: Decachlorobiphenyl	129			54-143	%REC	1	30-Nov-2018 01:47
Surr: Tetrachloro-m-xylene	102			50-140	%REC	1	30-Nov-2018 01:47
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		<b>Prep: SW3050A / 29-Nov-2018</b>		<b>Analyst: JCJ</b>	
Arsenic	7.06		0.382	2.73	mg/Kg-dry	5	30-Nov-2018 15:12
Cadmium	0.792	JJR	0.147	2.73	mg/Kg-dry	5	30-Nov-2018 15:12
Cobalt	7.23	JL	0.0819	2.73	mg/Kg-dry	5	30-Nov-2018 15:12
Iron	13,700		9.99	273	mg/Kg-dry	5	30-Nov-2018 15:12
Lead	40.0		0.0709	2.73	mg/Kg-dry	5	30-Nov-2018 15:12
Manganese	939		0.235	2.73	mg/Kg-dry	5	30-Nov-2018 15:12
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				<b>Analyst: DFF</b>	
Percent Moisture	15.0		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-10NW-20181128-30-56  
 Collection Date: 28-Nov-2018 12:20

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-08  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 29-Nov-2018		Analyst: GEY	
Acenaphthene	U		0.00059	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Acenaphthylene	U		0.0012	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Anthracene	U		0.00059	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Benz(a)anthracene	U		0.0019	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Benzo(a)pyrene	U		0.0012	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Benzo(b)fluoranthene	U		0.0014	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Benzo(g,h,i)perylene	U		0.00083	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Benzo(k)fluoranthene	U		0.0011	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Chrysene	U		0.00094	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Dibenz(a,h)anthracene	U		0.0019	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Fluoranthene	U		0.0013	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Fluorene	U		0.0013	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Indeno(1,2,3-cd)pyrene	U		0.00094	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Naphthalene	0.0058		0.00071	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Phenanthrene	U		0.0018	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Pyrene	U		0.00071	0.0039	mg/Kg-dry	1	30-Nov-2018 16:27
Surr: 2-Fluorobiphenyl	77.8			43-125	%REC	1	30-Nov-2018 16:27
Surr: 4-Terphenyl-d14	77.4			32-125	%REC	1	30-Nov-2018 16:27
Surr: Nitrobenzene-d5	78.8			37-125	%REC	1	30-Nov-2018 16:27
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 29-Nov-2018		Analyst: JLJ	
Aroclor 1016	U		0.0050	0.020	mg/Kg-dry	1	29-Nov-2018 22:54
Aroclor 1221	U		0.0066	0.020	mg/Kg-dry	1	29-Nov-2018 22:54
Aroclor 1232	U		0.0053	0.020	mg/Kg-dry	1	29-Nov-2018 22:54
Aroclor 1242	U		0.0070	0.020	mg/Kg-dry	1	29-Nov-2018 22:54
Aroclor 1248	U		0.0070	0.020	mg/Kg-dry	1	29-Nov-2018 22:54
Aroclor 1254	U		0.0055	0.020	mg/Kg-dry	1	29-Nov-2018 22:54
Aroclor 1260	U		0.0047	0.020	mg/Kg-dry	1	29-Nov-2018 22:54
Surr: Decachlorobiphenyl	124			54-143	%REC	1	29-Nov-2018 22:54
Surr: Tetrachloro-m-xylene	95.3			50-140	%REC	1	29-Nov-2018 22:54
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3541 / 29-Nov-2018		Analyst: JCJ	
Arsenic	3.51		0.381	2.72	mg/Kg-dry	5	30-Nov-2018 15:14
Cadmium	0.299	JL	0.147	2.72	mg/Kg-dry	5	30-Nov-2018 15:14
Cobalt	8.49	JL	0.0816	2.72	mg/Kg-dry	5	30-Nov-2018 15:14
Iron	9,610		9.95	272	mg/Kg-dry	5	30-Nov-2018 15:14
Lead	6.03		0.0707	2.72	mg/Kg-dry	5	30-Nov-2018 15:14
Manganese	1,230		4.68	54.4	mg/Kg-dry	100	30-Nov-2018 15:43
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	15.5		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD07-01-20181128-12-56  
 Collection Date: 28-Nov-2018 12:11

**ANALYTICAL REPORT**  
 WorkOrder: HS18111414  
 Lab ID: HS18111414-09  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW8541 / 29-Nov-2018		Analyst: GEY
Acenaphthene	U		0.00066	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Acenaphthylene	U		0.0013	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Anthracene	0.0011	JJP	0.00066	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Benz(a)anthracene	U		0.0021	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Benzo(a)pyrene	0.0014	JJP	0.0013	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Benzo(b)fluoranthene	0.0023	JJP	0.0016	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Benzo(g,h,i)perylene	U		0.00093	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Benzo(k)fluoranthene	U		0.0012	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Chrysene	0.0018	JJP	0.0011	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Dibenz(a,h)anthracene	U		0.0021	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Fluoranthene	0.0027	JJP	0.0015	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Fluorene	U		0.0015	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Indeno(1,2,3-cd)pyrene	U		0.0011	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Naphthalene	0.025		0.00079	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Phenanthrene	0.0076		0.0020	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Pyrene	0.0031	JJP	0.00079	0.0044	mg/Kg-dry	1	30-Nov-2018 16:06
Surr: 2-Fluorobiphenyl	84.5			43-125	%REC	1	30-Nov-2018 16:06
Surr: 4-Terphenyl-d14	108			32-125	%REC	1	30-Nov-2018 16:06
Surr: Nitrobenzene-d5	88.5			37-125	%REC	1	30-Nov-2018 16:06
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW8541/3665A / 29-Nov-2018		Analyst: JLJ
Aroclor 1016	U		0.0056	0.022	mg/Kg-dry	1	30-Nov-2018 02:03
Aroclor 1221	U		0.0075	0.022	mg/Kg-dry	1	30-Nov-2018 02:03
Aroclor 1232	U		0.0060	0.022	mg/Kg-dry	1	30-Nov-2018 02:03
Aroclor 1242	U		0.0079	0.022	mg/Kg-dry	1	30-Nov-2018 02:03
Aroclor 1248	U		0.0079	0.022	mg/Kg-dry	1	30-Nov-2018 02:03
Aroclor 1254	U		0.0063	0.022	mg/Kg-dry	1	30-Nov-2018 02:03
Aroclor 1260	U		0.0053	0.022	mg/Kg-dry	1	30-Nov-2018 02:03
Surr: Decachlorobiphenyl	135			54-143	%REC	1	30-Nov-2018 02:03
Surr: Tetrachloro-m-xylene	113			50-140	%REC	1	30-Nov-2018 02:03
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SA 3050A / 29-Nov-2018		Analyst: JCJ
Arsenic	6.96		0.435	3.11	mg/Kg-dry	5	30-Nov-2018 15:24
Cadmium	0.812	JJP	0.168	3.11	mg/Kg-dry	5	30-Nov-2018 15:24
Cobalt	15.1	JL	0.0932	3.11	mg/Kg-dry	5	30-Nov-2018 15:24
Iron	24,700		11.4	311	mg/Kg-dry	5	30-Nov-2018 15:24
Lead	23.8		0.0808	3.11	mg/Kg-dry	5	30-Nov-2018 15:24
Manganese	1,590		5.34	62.1	mg/Kg-dry	100	30-Nov-2018 15:50
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	25.1		0.0100	0.0100	wt%	1	29-Nov-2018 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120010

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120010; Frank J. Doyle Salvage Removal Action. Six samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>EAS04-20181130-18-56</u>	<u>FJD05-03A-20181130-12-56</u>	<u>FJD05-04A-20181130-18-56</u>
<u>FJD08-02-20181130-12-56</u>	<u>FJD09-01-20181130-06-56</u>	<u>FJD02-08-20181130-18-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 28, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD08-02-20181130-12-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.



## 8. Duplicates:

### A. Laboratory Duplicate Analysis:

Sample FJD08-02-20181130-12-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

## 9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

## 10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

## 11. Laboratory Contact:

The laboratory was contacted on January 23, 2019 regarding the lack of raw data for one continuing calibration blank. An acceptable response was received on January 28, 2019.

## 12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120010

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120010; Frank J. Doyle Salvage Removal Action. Six samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>EAS04-20181130-18-56</u>	<u>FJD05-03A-20181130-12-56</u>	<u>FJD05-04A-20181130-18-56</u>
<u>FJD08-02-20181130-12-56</u>	<u>FJD09-01-20181130-06-56</u>	<u>FJD02-08-20181130-18-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 29, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD08-02-20181130-12-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD08-02-20181130-12-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

The laboratory was contacted on January 23, 2019 regarding the lack of raw PAH data. An acceptable response was received on January 28, 2019.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120010

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120010; Frank J. Doyle Salvage Removal Action. Six samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>EAS04-20181130-18-56</u>	<u>FJD05-03A-20181130-12-56</u>	<u>FJD05-04A-20181130-18-56</u>
<u>FJD08-02-20181130-12-56</u>	<u>FJD09-01-20181130-06-56</u>	<u>FJD02-08-20181130-18-56</u>
_____	_____	_____
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_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 24, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample FJD08-02-20181130-12-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample FJD08-02-20181130-12-56 underwent MS/MSD analysis for ICP metals for the solid matrix. The spike recoveries for the following analytes were outside of the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more:

ANALYTE	MATRIX	%R/%R	AFFECTED SAMPLES	QUALIFIER FLAG
Cobalt Lead	Solid	OK/65.9 OK/45.3	All	JL JL

The post digestion spike recoveries were acceptable indicating a possible digestion problem. No further qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample FJD08-02-20181130-12-56 underwent serial dilution for the solid matrix for ICP metals. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 50 or 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

## 13. Laboratory Contact

No laboratory contact was required.

## 14. Overall Assessment:

The cobalt and lead results in all samples were estimated due to low MSD recoveries.

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS04-20181130-18-56  
 Collection Date: 30-Nov-2018 12:44

**ANALYTICAL REPORT**  
 WorkOrder: HS18120010  
 Lab ID: HS18120010-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 03-Dec-2018		Analyst: GEY
Acenaphthene	0.00072	JR	0.00060	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Anthracene	0.0013	JR	0.00060	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Benz(a)anthracene	0.0031	JR	0.0019	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Benzo(a)pyrene	0.0020	JR	0.0012	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Benzo(b)fluoranthene	0.0033	JR	0.0014	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Benzo(g,h,i)perylene	0.0013	JR	0.00084	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Benzo(k)fluoranthene	0.0015	JR	0.0011	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Chrysene	0.0026	JR	0.00096	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Fluoranthene	0.0047		0.0013	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Indeno(1,2,3-cd)pyrene	0.0019	JR	0.00096	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Naphthalene	U		0.00072	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Phenanthrene	0.0051		0.0018	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Pyrene	0.0044		0.00072	0.0040	mg/Kg-dry	1	03-Dec-2018 15:59
Surr: 2-Fluorobiphenyl	68.7			43-125	%REC	1	03-Dec-2018 15:59
Surr: 4-Terphenyl-d14	83.4			32-125	%REC	1	03-Dec-2018 15:59
Surr: Nitrobenzene-d5	74.3			37-125	%REC	1	03-Dec-2018 15:59
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 03-Dec-2018		Analyst: JLJ
Aroclor 1016	U		0.0050	0.020	mg/Kg-dry	1	04-Dec-2018 01:24
Aroclor 1221	U		0.0067	0.020	mg/Kg-dry	1	04-Dec-2018 01:24
Aroclor 1232	U		0.0054	0.020	mg/Kg-dry	1	04-Dec-2018 01:24
Aroclor 1242	U		0.0071	0.020	mg/Kg-dry	1	04-Dec-2018 01:24
Aroclor 1248	U		0.0071	0.020	mg/Kg-dry	1	04-Dec-2018 01:24
Aroclor 1254	U		0.0056	0.020	mg/Kg-dry	1	04-Dec-2018 01:24
Aroclor 1260	0.079		0.0048	0.020	mg/Kg-dry	1	04-Dec-2018 01:24
Surr: Decachlorobiphenyl	115			54-143	%REC	1	04-Dec-2018 01:24
Surr: Tetrachloro-m-xylene	104			50-140	%REC	1	04-Dec-2018 01:24
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 03-Dec-2018		Analyst: JCJ
Arsenic	7.52		0.0827	0.591	mg/Kg-dry	1	04-Dec-2018 15:42
Cadmium	0.311	JR	0.0319	0.591	mg/Kg-dry	1	04-Dec-2018 15:42
Cobalt	7.30	JL	0.0177	0.591	mg/Kg-dry	1	04-Dec-2018 15:42
Iron	12,600		2.16	59.1	mg/Kg-dry	1	04-Dec-2018 15:42
Lead	10.9	JL	0.0154	0.591	mg/Kg-dry	1	04-Dec-2018 15:42
Manganese	1,190		5.08	59.1	mg/Kg-dry	100	04-Dec-2018 19:24
<b>MOISTURE - ASTM D2216</b>			Method: ASTM D2216				Analyst: DFF
Percent Moisture	17.1		0.0100	0.0100	wt%	1	03-Dec-2018 10:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/12/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD05-03A-20181130-12-56  
 Collection Date: 30-Nov-2018 12:34

**ANALYTICAL REPORT**  
 WorkOrder: HS18120010  
 Lab ID: HS18120010-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 03-Dec-2018		Analyst: GEY
Acenaphthene	U		0.00060	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Anthracene	U		0.00060	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Benz(a)anthracene	0.0027	JJQ	0.0019	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Benzo(a)pyrene	0.0026	JJQ	0.0012	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Benzo(b)fluoranthene	0.0045		0.0014	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Benzo(g,h,i)perylene	0.0026	JJQ	0.00084	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Benzo(k)fluoranthene	0.0014	J	0.0011	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Chrysene	0.0028	J	0.00096	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Fluoranthene	0.0042		0.0013	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Indeno(1,2,3-cd)pyrene	0.0021	JJQ	0.00096	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Naphthalene	U		0.00072	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Phenanthrene	0.0031	JJQ	0.0018	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Pyrene	0.0045		0.00072	0.0040	mg/Kg-dry	1	03-Dec-2018 16:20
Surr: 2-Fluorobiphenyl	70.3			43-125	%REC	1	03-Dec-2018 16:20
Surr: 4-Terphenyl-d14	93.4			32-125	%REC	1	03-Dec-2018 16:20
Surr: Nitrobenzene-d5	78.1			37-125	%REC	1	03-Dec-2018 16:20
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 03-Dec-2018		Analyst: JLJ
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	04-Dec-2018 01:41
Aroclor 1221	U		0.0068	0.020	mg/Kg-dry	1	04-Dec-2018 01:41
Aroclor 1232	U		0.0054	0.020	mg/Kg-dry	1	04-Dec-2018 01:41
Aroclor 1242	U		0.0071	0.020	mg/Kg-dry	1	04-Dec-2018 01:41
Aroclor 1248	U		0.0071	0.020	mg/Kg-dry	1	04-Dec-2018 01:41
Aroclor 1254	U		0.0057	0.020	mg/Kg-dry	1	04-Dec-2018 01:41
Aroclor 1260	U		0.0048	0.020	mg/Kg-dry	1	04-Dec-2018 01:41
Surr: Decachlorobiphenyl	112			54-143	%REC	1	04-Dec-2018 01:41
Surr: Tetrachloro-m-xylene	105			50-140	%REC	1	04-Dec-2018 01:41
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 03-Dec-2018		Analyst: JCJ
Arsenic	11.1		0.0814	0.581	mg/Kg-dry	1	04-Dec-2018 15:44
Cadmium	0.360	JJQ	0.0314	0.581	mg/Kg-dry	1	04-Dec-2018 15:44
Cobalt	5.93	JL	0.0174	0.581	mg/Kg-dry	1	04-Dec-2018 15:44
Iron	10,400		2.13	58.1	mg/Kg-dry	1	04-Dec-2018 15:44
Lead	35.5	JL	0.0151	0.581	mg/Kg-dry	1	04-Dec-2018 15:44
Manganese	1,100		5.00	58.1	mg/Kg-dry	100	04-Dec-2018 19:26
<b>MOISTURE - ASTM D2216</b>			Method: ASTM D2216				Analyst: DFF
Percent Moisture	17.6		0.0100	0.0100	wt%	1	03-Dec-2018 10:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Handwritten signature/initials: JJQ

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD05-04A-20181130-18-56  
 Collection Date: 30-Nov-2018 12:38

**ANALYTICAL REPORT**  
 WorkOrder: HS18120010  
 Lab ID: HS18120010-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 03-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00061	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Anthracene	U		0.00061	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Benz(a)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Benzo(a)pyrene	0.0014	JR	0.0012	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Benzo(b)fluoranthene	0.0026	JR	0.0015	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Benzo(g,h,i)perylene	0.0018	JR	0.00085	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Benzo(k)fluoranthene	0.0011	JR	0.0011	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Chrysene	0.0013	JR	0.00097	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Fluoranthene	0.0014	JR	0.0013	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Indeno(1,2,3-cd)pyrene	0.0021	JR	0.00097	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Naphthalene	U		0.00073	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Phenanthrene	U		0.0018	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Pyrene	0.0016	JR	0.00073	0.0040	mg/Kg-dry	1	03-Dec-2018 16:40
Surr: 2-Fluorobiphenyl	68.1			43-125	%REC	1	03-Dec-2018 16:40
Surr: 4-Terphenyl-d14	93.2			32-125	%REC	1	03-Dec-2018 16:40
Surr: Nitrobenzene-d5	73.1			37-125	%REC	1	03-Dec-2018 16:40
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 03-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	04-Dec-2018 01:57
Aroclor 1221	U		0.0068	0.020	mg/Kg-dry	1	04-Dec-2018 01:57
Aroclor 1232	U		0.0055	0.020	mg/Kg-dry	1	04-Dec-2018 01:57
Aroclor 1242	U		0.0072	0.020	mg/Kg-dry	1	04-Dec-2018 01:57
Aroclor 1248	U		0.0072	0.020	mg/Kg-dry	1	04-Dec-2018 01:57
Aroclor 1254	U		0.0057	0.020	mg/Kg-dry	1	04-Dec-2018 01:57
Aroclor 1260	U		0.0049	0.020	mg/Kg-dry	1	04-Dec-2018 01:57
Surr: Decachlorobiphenyl	110			54-143	%REC	1	04-Dec-2018 01:57
Surr: Tetrachloro-m-xylene	88.4			50-140	%REC	1	04-Dec-2018 01:57
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 03-Dec-2018		Analyst: JCJ	
Arsenic	9.62		0.0812	0.580	mg/Kg-dry	1	04-Dec-2018 15:46
Cadmium	0.369	JR	0.0313	0.580	mg/Kg-dry	1	04-Dec-2018 15:46
Cobalt	7.16	JL	0.0174	0.580	mg/Kg-dry	1	04-Dec-2018 15:46
Iron	13,400		2.12	58.0	mg/Kg-dry	1	04-Dec-2018 15:46
Lead	17.8	JL	0.0151	0.580	mg/Kg-dry	1	04-Dec-2018 15:46
Manganese	1,080		4.99	58.0	mg/Kg-dry	100	04-Dec-2018 19:28
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	18.4		0.0100	0.0100	wt%	1	03-Dec-2018 10:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD08-02-20181130-12-56  
 Collection Date: 30-Nov-2018 14:56

**ANALYTICAL REPORT**  
 WorkOrder: HS18120010  
 Lab ID: HS18120010-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 03-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Benz(a)anthracene	0.0024	JQ	0.0021	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Benzo(a)pyrene	0.0028	JQ	0.0013	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Benzo(b)fluoranthene	0.0060		0.0016	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Benzo(g,h,i)perylene	0.0057		0.00092	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Benzo(k)fluoranthene	0.0036	JQ	0.0012	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Chrysene	0.0021	JQ	0.0010	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Dibenz(a,h)anthracene	0.0036	JQ	0.0021	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Fluoranthene	U		0.0014	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Indeno(1,2,3-cd)pyrene	0.0061		0.0010	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Naphthalene	U		0.00079	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Phenanthrene	U		0.0020	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Pyrene	0.0017	JQ	0.00079	0.0043	mg/Kg-dry	1	03-Dec-2018 17:00
Surr: 2-Fluorobiphenyl	71.0			43-125	%REC	1	03-Dec-2018 17:00
Surr: 4-Terphenyl-d14	94.2			32-125	%REC	1	03-Dec-2018 17:00
Surr: Nitrobenzene-d5	75.5			37-125	%REC	1	03-Dec-2018 17:00
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 03-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	04-Dec-2018 00:33
Aroclor 1221	U		0.0074	0.022	mg/Kg-dry	1	04-Dec-2018 00:33
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	04-Dec-2018 00:33
Aroclor 1242	U		0.0078	0.022	mg/Kg-dry	1	04-Dec-2018 00:33
Aroclor 1248	U		0.0078	0.022	mg/Kg-dry	1	04-Dec-2018 00:33
Aroclor 1254	U		0.0062	0.022	mg/Kg-dry	1	04-Dec-2018 00:33
Aroclor 1260	U		0.0053	0.022	mg/Kg-dry	1	04-Dec-2018 00:33
Surr: Decachlorobiphenyl	96.0			54-143	%REC	1	04-Dec-2018 00:33
Surr: Tetrachloro-m-xylene	88.0			50-140	%REC	1	04-Dec-2018 00:33
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 03-Dec-2018		Analyst: JCJ	
Arsenic	7.30		0.0898	0.641	mg/Kg-dry	1	04-Dec-2018 15:48
Cadmium	0.316	JQ	0.0346	0.641	mg/Kg-dry	1	04-Dec-2018 15:48
Cobalt	22.4	JL	0.0192	0.641	mg/Kg-dry	1	04-Dec-2018 15:48
Iron	28,300		235	6410	mg/Kg-dry	100	04-Dec-2018 19:04
Lead	33.8	JL	0.0167	0.641	mg/Kg-dry	1	04-Dec-2018 15:48
Manganese	1,740		5.51	64.1	mg/Kg-dry	100	04-Dec-2018 19:04
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	24.6		0.0100	0.0100	wt%	1	03-Dec-2018 10:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD09-01-20181130-06-56  
 Collection Date: 30-Nov-2018 12:54

**ANALYTICAL REPORT**  
 WorkOrder: HS18120010  
 Lab ID: HS18120010-05  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 03-Dec-2018		Analyst: GEY
Acenaphthene	U		0.00063	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Acenaphthylene	U		0.0013	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Anthracene	0.0012	JL	0.00063	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Benz(a)anthracene	0.0063		0.0020	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Benzo(a)pyrene	0.0066		0.0013	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Benzo(b)fluoranthene	0.012		0.0015	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Benzo(g,h,i)perylene	0.0060		0.00088	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Benzo(k)fluoranthene	0.0050		0.0011	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Chrysene	0.0080		0.0010	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Fluoranthene	0.0093		0.0014	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Indeno(1,2,3-cd)pyrene	0.0053		0.0010	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Phenanthrene	0.0036	JL	0.0019	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Pyrene	0.011		0.00075	0.0041	mg/Kg-dry	1	03-Dec-2018 18:01
Surr: 2-Fluorobiphenyl	75.2			43-125	%REC	1	03-Dec-2018 18:01
Surr: 4-Terphenyl-d14	86.7			32-125	%REC	1	03-Dec-2018 18:01
Surr: Nitrobenzene-d5	75.9			37-125	%REC	1	03-Dec-2018 18:01
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3655A / 03-Dec-2018		Analyst: JLJ
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	04-Dec-2018 02:14
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	04-Dec-2018 02:14
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	04-Dec-2018 02:14
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	04-Dec-2018 02:14
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	04-Dec-2018 02:14
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	04-Dec-2018 02:14
Aroclor 1260	U		0.0050	0.021	mg/Kg-dry	1	04-Dec-2018 02:14
Surr: Decachlorobiphenyl	125			54-143	%REC	1	04-Dec-2018 02:14
Surr: Tetrachloro-m-xylene	116			50-140	%REC	1	04-Dec-2018 02:14
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 03-Dec-2018		Analyst: JCJ
Arsenic	7.13		0.0845	0.604	mg/Kg-dry	1	04-Dec-2018 16:32
Cadmium	0.412	JL	0.0326	0.604	mg/Kg-dry	1	04-Dec-2018 16:32
Cobalt	14.7	JL	0.0181	0.604	mg/Kg-dry	1	04-Dec-2018 16:32
Iron	27,100		221	6040	mg/Kg-dry	100	04-Dec-2018 19:30
Lead	37.0	JL	0.0157	0.604	mg/Kg-dry	1	04-Dec-2018 16:32
Manganese	1,540		5.19	60.4	mg/Kg-dry	100	04-Dec-2018 19:30
<b>MOISTURE - ASTM D2216</b>			Method: ASTM D2216				Analyst: DFF
Percent Moisture	21.2		0.0100	0.0100	wt%	1	03-Dec-2018 10:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/12/19

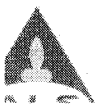


Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD02-08-20181130-18-56  
 Collection Date: 30-Nov-2018 12:48

**ANALYTICAL REPORT**  
 WorkOrder: HS18120010  
 Lab ID: HS18120010-06  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 03-Dec-2018		Analyst: GEY
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Benzo(b)fluoranthene	U		0.0015	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Benzo(g,h,i)perylene	U		0.00087	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Chrysene	U		0.00099	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Indeno(1,2,3-cd)pyrene	U		0.00099	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Naphthalene	U		0.00074	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Pyrene	0.00084	JTP	0.00074	0.0041	mg/Kg-dry	1	03-Dec-2018 17:41
Surr: 2-Fluorobiphenyl	62.1			43-125	%REC	1	03-Dec-2018 17:41
Surr: 4-Terphenyl-d14	92.7			32-125	%REC	1	03-Dec-2018 17:41
Surr: Nitrobenzene-d5	67.7			37-125	%REC	1	03-Dec-2018 17:41
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 03-Dec-2018		Analyst: JJJ
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	04-Dec-2018 02:31
Aroclor 1221	U		0.0069	0.021	mg/Kg-dry	1	04-Dec-2018 02:31
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	04-Dec-2018 02:31
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	04-Dec-2018 02:31
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	04-Dec-2018 02:31
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	04-Dec-2018 02:31
Aroclor 1260	U		0.0049	0.021	mg/Kg-dry	1	04-Dec-2018 02:31
Surr: Decachlorobiphenyl	122			54-143	%REC	1	04-Dec-2018 02:31
Surr: Tetrachloro-m-xylene	112			50-140	%REC	1	04-Dec-2018 02:31
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 03-Dec-2018		Analyst: JCJ
Arsenic	9.48		0.0844	0.603	mg/Kg-dry	1	04-Dec-2018 16:34
Cadmium	0.334	JTP	0.0326	0.603	mg/Kg-dry	1	04-Dec-2018 16:34
Cobalt	5.62	JL	0.0181	0.603	mg/Kg-dry	1	04-Dec-2018 16:34
Iron	10,800		2.21	60.3	mg/Kg-dry	1	04-Dec-2018 16:34
Lead	6.88	JL	0.0157	0.603	mg/Kg-dry	1	04-Dec-2018 16:34
Manganese	927		2.59	30.1	mg/Kg-dry	50	04-Dec-2018 19:33
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	19.8		0.0100	0.0100	wt%	1	03-Dec-2018 10:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/12/19

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120093

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120093; Frank J. Doyle Salvage Removal Action. Eight samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA10-20181203-16-56</u>	<u>DRA11-20181203-12-56</u>	<u>EAS05-20181203-18-56</u>
<u>FJD02-06-20181203-24-56</u>	<u>FJD03-03-20181203-24-56</u>	<u>FJD08-03-20181203-14-56</u>
<u>FJD08-04-20181203-14-56</u>	<u>FJD08-04-20181203-14-57</u>	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 24, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD02-06-20181203-24-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD02-06-20181203-24-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD08-04-20181203-14-56/FJD08-04-20181203-14-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Aroclor 1260 in some samples was analyzed at a 2 or 5-fold dilution. Reporting limits for Aroclor 1260 in these samples was elevated as a result of the dilutions performed.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120093

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120093; Frank J. Doyle Salvage Removal Action. Eight samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA10-20181203-16-56</u>	<u>DRA11-20181203-12-56</u>	<u>EAS05-20181203-18-56</u>
<u>FJD02-06-20181203-24-56</u>	<u>FJD03-03-20181203-24-56</u>	<u>FJD08-03-20181203-14-56</u>
<u>FJD08-04-20181203-14-56</u>	<u>FJD08-04-20181203-14-57</u>	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 24, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.



8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD02-06-20181203-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD08-04-20181203-14-56/FJD08-04-20181203-14-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD02-06-20181203-24-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120093

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120093; Frank J. Doyle Salvage Removal Action. Eight samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA10-20181203-16-56</u>	<u>DRA11-20181203-12-56</u>	<u>EAS05-20181203-18-56</u>
<u>FJD02-06-20181203-24-56</u>	<u>FJD03-03-20181203-24-56</u>	<u>FJD08-03-20181203-14-56</u>
<u>FJD08-04-20181203-14-56</u>	<u>FJD08-04-20181203-14-57</u>	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 29, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample FJD02-06-20181203-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: FJD08-04-20181203-14-56/FJD08-04-20181203-14-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample FJD02-06-20181203-24-56 underwent MS/MSD analysis for ICP metals for the solid matrix. The spike recoveries for the following analytes were outside of the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more:

ANALYTE	MATRIX	%R/%R	AFFECTED SAMPLES	QUALIFIER FLAG
Cobalt	Solid	OK/69.9	All	JL

The post digestion spike recovery was acceptable indicating a possible digestion problem. No further qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample FJD02-06-20181203-24-56 underwent serial dilution for the solid matrix for ICP metals. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 50 or 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

### 13. Laboratory Contact

The laboratory was contacted on January 24, 2019 regarding an incorrect statement in the case narrative. An acceptable response was received on January 28, 2019.

### 14. Overall Assessment:

The cobalt result in all samples was estimated due to low MSD recovery.

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA010-20181203-16-56  
 Collection Date: 03-Dec-2018 14:00

**ANALYTICAL REPORT**  
 WorkOrder: HS18120093  
 Lab ID: HS18120093-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 04-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00061	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Acenaphthylene	0.0016	+ JQ	0.0012	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Anthracene	0.0022	+ J	0.00061	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Benz(a)anthracene	0.033		0.0020	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Benzo(a)pyrene	0.046		0.0012	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Benzo(b)fluoranthene	0.094		0.0015	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Benzo(g,h,i)perylene	0.046		0.00086	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Benzo(k)fluoranthene	0.034		0.0011	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Chrysene	0.048		0.00098	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Dibenz(a,h)anthracene	0.013		0.0020	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Fluoranthene	0.044		0.0013	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Indeno(1,2,3-cd)pyrene	0.060		0.00098	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Naphthalene	U		0.00074	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Phenanthrene	0.010		0.0018	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Pyrene	0.048		0.00074	0.0040	mg/Kg-dry	1	05-Dec-2018 13:28
Surr: 2-Fluorobiphenyl	60.1			43-125	%REC	1	05-Dec-2018 13:28
Surr: 4-Terphenyl-d14	94.9			32-125	%REC	1	05-Dec-2018 13:28
Surr: Nitrobenzene-d5	58.3			37-125	%REC	1	05-Dec-2018 13:28
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 04-Dec-2018		Analyst: JJJ	
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	05-Dec-2018 10:59
Aroclor 1221	U		0.0068	0.020	mg/Kg-dry	1	05-Dec-2018 10:59
Aroclor 1232	U		0.0055	0.020	mg/Kg-dry	1	05-Dec-2018 10:59
Aroclor 1242	U		0.0072	0.020	mg/Kg-dry	1	05-Dec-2018 10:59
Aroclor 1248	U		0.0072	0.020	mg/Kg-dry	1	05-Dec-2018 10:59
Aroclor 1254	U		0.0057	0.020	mg/Kg-dry	1	05-Dec-2018 10:59
Aroclor 1260	0.80		0.024	0.10	mg/Kg-dry	5	05-Dec-2018 13:30
Surr: Decachlorobiphenyl	126			54-143	%REC	5	05-Dec-2018 13:30
Surr: Decachlorobiphenyl	126			54-143	%REC	1	05-Dec-2018 10:59
Surr: Tetrachloro-m-xylene	103			50-140	%REC	1	05-Dec-2018 10:59
Surr: Tetrachloro-m-xylene	95.3	J		50-140	%REC	5	05-Dec-2018 13:30
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 04-Dec-2018		Analyst: JCJ	
Arsenic	9.48		0.0822	0.587	mg/Kg-dry	1	05-Dec-2018 16:01
Cadmium	0.476	+ JQ	0.0317	0.587	mg/Kg-dry	1	05-Dec-2018 16:01
Cobalt	13.3	JL	0.0176	0.587	mg/Kg-dry	1	05-Dec-2018 16:01
Iron	26,700		215	5870	mg/Kg-dry	100	05-Dec-2018 16:58
Lead	35.5		0.0153	0.587	mg/Kg-dry	1	05-Dec-2018 16:01
Manganese	1,240		5.05	58.7	mg/Kg-dry	100	05-Dec-2018 16:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: DRA010-20181203-16-56  
Collection Date: 03-Dec-2018 14:00

**ANALYTICAL REPORT**  
WorkOrder: HS18120093  
Lab ID: HS18120093-01  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216		Method: ASTM D2216		Analyst: DFF			
Percent Moisture	18.7		0.0100	0.0100	wt%	1	04-Dec-2018 12:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

*1/24/19*

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA011-20181203-12-56  
 Collection Date: 03-Dec-2018 14:18

**ANALYTICAL REPORT**  
 WorkOrder: HS18120093  
 Lab ID: HS18120093-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 04-Dec-2018		Analyst: GEY	
Acenaphthene	0.0016	JJ	0.00062	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Acenaphthylene	0.0021	JJ	0.0012	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Anthracene	0.0065		0.00062	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Benz(a)anthracene	0.13		0.0020	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Benzo(a)pyrene	0.18		0.0012	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Benzo(b)fluoranthene	0.39		0.0015	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Benzo(g,h,i)perylene	0.15		0.00087	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Benzo(k)fluoranthene	0.15		0.0011	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Chrysene	0.17		0.00099	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Dibenz(a,h)anthracene	0.037		0.0020	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Fluoranthene	0.20		0.0014	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Indeno(1,2,3-cd)pyrene	0.19		0.00099	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Naphthalene	0.00079	JJ	0.00074	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Phenanthrene	0.043		0.0019	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Pyrene	0.23		0.00074	0.0041	mg/Kg-dry	1	05-Dec-2018 13:48
Surr: 2-Fluorobiphenyl	62.1			43-125	%REC	1	05-Dec-2018 13:48
Surr: 4-Terphenyl-d14	87.7			32-125	%REC	1	05-Dec-2018 13:48
Surr: Nitrobenzene-d5	58.0			37-125	%REC	1	05-Dec-2018 13:48
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 04-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	05-Dec-2018 11:50
Aroclor 1221	U		0.0069	0.021	mg/Kg-dry	1	05-Dec-2018 11:50
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	05-Dec-2018 11:50
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	05-Dec-2018 11:50
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	05-Dec-2018 11:50
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	05-Dec-2018 11:50
Aroclor 1260	0.58		0.025	0.10	mg/Kg-dry	5	05-Dec-2018 13:47
Surr: Decachlorobiphenyl	115	J		54-143	%REC	5	05-Dec-2018 13:47
Surr: Decachlorobiphenyl	108			54-143	%REC	1	05-Dec-2018 11:50
Surr: Tetrachloro-m-xylene	89.2			50-140	%REC	1	05-Dec-2018 11:50
Surr: Tetrachloro-m-xylene	88.7	J		50-140	%REC	5	05-Dec-2018 13:47
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 04-Dec-2018		Analyst: JCJ	
Arsenic	18.9		0.0832	0.594	mg/Kg-dry	1	05-Dec-2018 16:03
Cadmium	0.426	JJ	0.0321	0.594	mg/Kg-dry	1	05-Dec-2018 16:03
Cobalt	12.5	JL	0.0178	0.594	mg/Kg-dry	1	05-Dec-2018 16:03
Iron	23,300		218	5940	mg/Kg-dry	100	05-Dec-2018 17:00
Lead	36.1		0.0155	0.594	mg/Kg-dry	1	05-Dec-2018 16:03
Manganese	1,190		5.11	59.4	mg/Kg-dry	100	05-Dec-2018 17:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: DRA011-20181203-12-56  
Collection Date: 03-Dec-2018 14:18

**ANALYTICAL REPORT**

WorkOrder: HS18120093  
Lab ID: HS18120093-02  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216		Method: ASTM D2216					Analyst: DFF
Percent Moisture	19.8		0.0100	0.0100	wt%	1	04-Dec-2018 12:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.



*Handwritten signature and date: 1/24/19*

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS05-20181203-18-56  
 Collection Date: 03-Dec-2018 13:49

**ANALYTICAL REPORT**  
 WorkOrder: HS18120093  
 Lab ID: HS18120093-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 04-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00061	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Anthracene	U		0.00061	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Benz(a)anthracene	0.0048		0.0019	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Benzo(a)pyrene	0.0033	JTQ	0.0012	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Benzo(b)fluoranthene	0.0058		0.0015	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Benzo(g,h,i)perylene	0.0032	JTQ	0.00085	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Benzo(k)fluoranthene	0.0031	J	0.0011	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Chrysene	0.0040	J	0.00097	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Fluoranthene	0.0098		0.0013	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Indeno(1,2,3-cd)pyrene	0.0018	JTQ	0.00097	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Naphthalene	U		0.00073	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Phenanthrene	U		0.0018	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Pyrene	0.015		0.00073	0.0040	mg/Kg-dry	1	05-Dec-2018 13:07
Surr: 2-Fluorobiphenyl	69.3			43-125	%REC	1	05-Dec-2018 13:07
Surr: 4-Terphenyl-d14	104			32-125	%REC	1	05-Dec-2018 13:07
Surr: Nitrobenzene-d5	73.6			37-125	%REC	1	05-Dec-2018 13:07
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 04-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	05-Dec-2018 12:06
Aroclor 1221	U		0.0068	0.020	mg/Kg-dry	1	05-Dec-2018 12:06
Aroclor 1232	U		0.0054	0.020	mg/Kg-dry	1	05-Dec-2018 12:06
Aroclor 1242	U		0.0071	0.020	mg/Kg-dry	1	05-Dec-2018 12:06
Aroclor 1248	U		0.0071	0.020	mg/Kg-dry	1	05-Dec-2018 12:06
Aroclor 1254	U		0.0057	0.020	mg/Kg-dry	1	05-Dec-2018 12:06
Aroclor 1260	0.051		0.0048	0.020	mg/Kg-dry	1	05-Dec-2018 12:06
Surr: Decachlorobiphenyl	95.3			54-143	%REC	1	05-Dec-2018 12:06
Surr: Tetrachloro-m-xylene	65.9			50-140	%REC	1	05-Dec-2018 12:06
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 04-Dec-2018		Analyst: JCJ	
Arsenic	5.89		0.0833	0.595	mg/Kg-dry	1	05-Dec-2018 16:37
Cadmium	0.276	JTQ	0.0321	0.595	mg/Kg-dry	1	05-Dec-2018 16:37
Cobalt	7.07	JL	0.0179	0.595	mg/Kg-dry	1	05-Dec-2018 16:37
Iron	14,100		2.18	59.5	mg/Kg-dry	1	05-Dec-2018 16:37
Lead	12.9		0.0155	0.595	mg/Kg-dry	1	05-Dec-2018 16:37
Manganese	1,080		5.12	59.5	mg/Kg-dry	100	05-Dec-2018 17:18
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	18.4		0.0100	0.0100	wt%	1	04-Dec-2018 12:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.



12/21/18

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD02-06-20181203-24-56  
 Collection Date: 03-Dec-2018 13:53

**ANALYTICAL REPORT**  
 WorkOrder: HS18120093  
 Lab ID: HS18120093-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		Prep: SW3541 / 04-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00061	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Anthracene	U		0.00061	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Benzo(b)fluoranthene	U		0.0015	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Benzo(g,h,i)perylene	U		0.00086	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Chrysene	U		0.00098	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Indeno(1,2,3-cd)pyrene	U		0.00098	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Naphthalene	U		0.00074	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Phenanthrene	U		0.0018	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Pyrene	U		0.00074	0.0041	mg/Kg-dry	1	04-Dec-2018 18:09
Surr: 2-Fluorobiphenyl	71.8			43-125	%REC	1	04-Dec-2018 18:09
Surr: 4-Terphenyl-d14	88.3			32-125	%REC	1	04-Dec-2018 18:09
Surr: Nitrobenzene-d5	73.5			37-125	%REC	1	04-Dec-2018 18:09
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		Prep: SW3541/3665A / 04-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	05-Dec-2018 10:09
Aroclor 1221	U		0.0069	0.021	mg/Kg-dry	1	05-Dec-2018 10:09
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	05-Dec-2018 10:09
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	05-Dec-2018 10:09
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	05-Dec-2018 10:09
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	05-Dec-2018 10:09
Aroclor 1260	U		0.0049	0.021	mg/Kg-dry	1	05-Dec-2018 10:09
Surr: Decachlorobiphenyl	101			54-143	%REC	1	05-Dec-2018 10:09
Surr: Tetrachloro-m-xylene	92.7			50-140	%REC	1	05-Dec-2018 10:09
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		Prep: SW3050A / 04-Dec-2018		Analyst: JCJ	
Arsenic	5.71		0.0808	0.577	mg/Kg-dry	1	05-Dec-2018 16:06
Cadmium	0.318	✓	0.0312	0.577	mg/Kg-dry	1	05-Dec-2018 16:06
Cobalt	6.50	JL	0.0173	0.577	mg/Kg-dry	1	05-Dec-2018 16:06
Iron	12,800		2.11	57.7	mg/Kg-dry	1	05-Dec-2018 16:06
Lead	7.41		0.0150	0.577	mg/Kg-dry	1	05-Dec-2018 16:06
Manganese	718		2.48	28.9	mg/Kg-dry	50	05-Dec-2018 17:12
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				Analyst: DFF	
Percent Moisture	19.4		0.0100	0.0100	wt%	1	04-Dec-2018 12:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-03-20181203-24-56  
 Collection Date: 03-Dec-2018 13:55

**ANALYTICAL REPORT**  
 WorkOrder: HS18120093  
 Lab ID: HS18120093-05  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 04-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00063	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Anthracene	U		0.00063	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Benz(a)anthracene	0.0042		0.0020	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Benzo(a)pyrene	0.0060		0.0013	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Benzo(b)fluoranthene	0.0094		0.0015	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Benzo(g,h,i)perylene	0.011		0.00089	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Benzo(k)fluoranthene	0.0066		0.0011	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Chrysene	0.0043		0.0010	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Dibenz(a,h)anthracene	0.013		0.0020	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Fluoranthene	0.0018	JQ	0.0014	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Indeno(1,2,3-cd)pyrene	0.013		0.0010	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Naphthalene	U		0.00076	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Phenanthrene	U		0.0019	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Pyrene	0.0022	JQ	0.00076	0.0042	mg/Kg-dry	1	04-Dec-2018 19:09
Surr: 2-Fluorobiphenyl	73.5			43-125	%REC	1	04-Dec-2018 19:09
Surr: 4-Terphenyl-d14	91.5			32-125	%REC	1	04-Dec-2018 19:09
Surr: Nitrobenzene-d5	72.7			37-125	%REC	1	04-Dec-2018 19:09
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 04-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	05-Dec-2018 12:23
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	05-Dec-2018 12:23
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	05-Dec-2018 12:23
Aroclor 1242	U		0.0075	0.021	mg/Kg-dry	1	05-Dec-2018 12:23
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	05-Dec-2018 12:23
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	05-Dec-2018 12:23
Aroclor 1260	U		0.0051	0.021	mg/Kg-dry	1	05-Dec-2018 12:23
Surr: Decachlorobiphenyl	108			54-143	%REC	1	05-Dec-2018 12:23
Surr: Tetrachloro-m-xylene	96.5			50-140	%REC	1	05-Dec-2018 12:23
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 04-Dec-2018		Analyst: JCJ	
Arsenic	7.45		0.0831	0.594	mg/Kg-dry	1	05-Dec-2018 16:40
Cadmium	0.466	JR	0.0321	0.594	mg/Kg-dry	1	05-Dec-2018 16:40
Cobalt	21.6	JL	0.0178	0.594	mg/Kg-dry	1	05-Dec-2018 16:40
Iron	21,300		2.17	59.4	mg/Kg-dry	1	05-Dec-2018 16:40
Lead	16.6		0.0154	0.594	mg/Kg-dry	1	05-Dec-2018 16:40
Manganese	3,540		10.2	119	mg/Kg-dry	200	05-Dec-2018 17:21
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	21.2		0.0100	0.0100	wt%	1	04-Dec-2018 12:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD08-03-20181203-14-56  
 Collection Date: 03-Dec-2018 14:15

**ANALYTICAL REPORT**  
 WorkOrder: HS18120093  
 Lab ID: HS18120093-06  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 04-Dec-2018		Analyst: GEY
Acenaphthene	U		0.00064	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Anthracene	U		0.00064	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Benz(a)anthracene	0.0047		0.0020	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Benzo(a)pyrene	0.0059		0.0013	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Benzo(b)fluoranthene	0.0095		0.0015	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Benzo(g,h,i)perylene	0.0054		0.00089	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Benzo(k)fluoranthene	0.0046		0.0011	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Chrysene	0.0063		0.0010	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Dibenz(a,h)anthracene	0.0022	JJP	0.0020	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Fluoranthene	0.0059		0.0014	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Indeno(1,2,3-cd)pyrene	0.0052		0.0010	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Naphthalene	U		0.00076	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Phenanthrene	U		0.0019	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Pyrene	0.0064		0.00076	0.0042	mg/Kg-dry	1	04-Dec-2018 19:29
Surr: 2-Fluorobiphenyl	67.5			43-125	%REC	1	04-Dec-2018 19:29
Surr: 4-Terphenyl-d14	84.8			32-125	%REC	1	04-Dec-2018 19:29
Surr: Nitrobenzene-d5	72.1			37-125	%REC	1	04-Dec-2018 19:29
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 04-Dec-2018		Analyst: JLJ
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	05-Dec-2018 12:40
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	05-Dec-2018 12:40
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	05-Dec-2018 12:40
Aroclor 1242	U		0.0075	0.021	mg/Kg-dry	1	05-Dec-2018 12:40
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	05-Dec-2018 12:40
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	05-Dec-2018 12:40
Aroclor 1260	0.024		0.0051	0.021	mg/Kg-dry	1	05-Dec-2018 12:40
Surr: Decachlorobiphenyl	102			54-143	%REC	1	05-Dec-2018 12:40
Surr: Tetrachloro-m-xylene	78.0			50-140	%REC	1	05-Dec-2018 12:40
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 04-Dec-2018		Analyst: JCJ
Arsenic	8.41		0.0866	0.618	mg/Kg-dry	1	05-Dec-2018 16:42
Cadmium	0.295	JJP	0.0334	0.618	mg/Kg-dry	1	05-Dec-2018 16:42
Cobalt	13.5	JL	0.0186	0.618	mg/Kg-dry	1	05-Dec-2018 16:42
Iron	27,000		113	3090	mg/Kg-dry	50	05-Dec-2018 17:23
Lead	34.8		0.0161	0.618	mg/Kg-dry	1	05-Dec-2018 16:42
Manganese	1,120		2.66	30.9	mg/Kg-dry	50	05-Dec-2018 17:23
<b>MOISTURE - ASTM D2216</b>			Method: ASTM D2216				Analyst: DFF
Percent Moisture	21.8		0.0100	0.0100	wt%	1	04-Dec-2018 12:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle R/ATX  
 Sample ID: FJD08-04-20181203-14-56  
 Collection Date: 03-Dec-2018 14:07

**ANALYTICAL REPORT**  
 WorkOrder: HS18120093  
 Lab ID: HS18120093-07  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 04-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00063	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Acenaphthylene	U		0.0013	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Anthracene	0.0010	JL	0.00063	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Benz(a)anthracene	0.0046		0.0020	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Benzo(a)pyrene	0.0064		0.0013	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Benzo(b)fluoranthene	0.012		0.0015	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Benzo(g,h,i)perylene	0.011		0.00088	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Benzo(k)fluoranthene	0.0037	JL	0.0011	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Chrysene	0.0064		0.0010	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Fluoranthene	0.0062		0.0014	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Indeno(1,2,3-cd)pyrene	0.0063		0.0010	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Phenanthrene	0.0025	JL	0.0019	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Pyrene	0.0063		0.00075	0.0041	mg/Kg-dry	1	05-Dec-2018 12:47
Surr: 2-Fluorobiphenyl	52.4			43-125	%REC	1	05-Dec-2018 12:47
Surr: 4-Terphenyl-d14	91.8			32-125	%REC	1	05-Dec-2018 12:47
Surr: Nitrobenzene-d5	46.6			37-125	%REC	1	05-Dec-2018 12:47
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 04-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	05-Dec-2018 12:57
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	05-Dec-2018 12:57
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	05-Dec-2018 12:57
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	05-Dec-2018 12:57
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	05-Dec-2018 12:57
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	05-Dec-2018 12:57
Aroclor 1260	0.32		0.0050	0.021	mg/Kg-dry	1	05-Dec-2018 12:57
Surr: Decachlorobiphenyl	100			54-143	%REC	1	05-Dec-2018 12:57
Surr: Tetrachloro-m-xylene	70.1			50-140	%REC	1	05-Dec-2018 12:57
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 04-Dec-2018		Analyst: JCJ	
Arsenic	9.87		0.0846	0.604	mg/Kg-dry	1	05-Dec-2018 16:44
Cadmium	0.329	JL	0.0326	0.604	mg/Kg-dry	1	05-Dec-2018 16:44
Cobalt	20.2	JL	0.0181	0.604	mg/Kg-dry	1	05-Dec-2018 16:44
Iron	30,900		221	6040	mg/Kg-dry	100	05-Dec-2018 17:25
Lead	32.6		0.0157	0.604	mg/Kg-dry	1	05-Dec-2018 16:44
Manganese	2,020		5.19	60.4	mg/Kg-dry	100	05-Dec-2018 17:25
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	21.2		0.0100	0.0100	wt%	1	04-Dec-2018 12:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD08-04-20181203-14-57  
 Collection Date: 03-Dec-2018 14:07

**ANALYTICAL REPORT**  
 WorkOrder: HS18120093  
 Lab ID: HS18120093-08  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 04-Dec-2018	Analyst: GEY	
Acenaphthene	U		0.00063	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Anthracene	0.0013	JR	0.00063	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Benz(a)anthracene	0.0082		0.0020	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Benzo(a)pyrene	0.010		0.0013	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Benzo(b)fluoranthene	0.022		0.0015	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Benzo(g,h,i)perylene	0.010		0.00089	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Benzo(k)fluoranthene	0.0075		0.0011	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Chrysene	0.010		0.0010	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Fluoranthene	0.0090		0.0014	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Indeno(1,2,3-cd)pyrene	0.012		0.0010	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Naphthalene	U		0.00076	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Phenanthrene	0.0025	JR	0.0019	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Pyrene	0.011		0.00076	0.0042	mg/Kg-dry	1	04-Dec-2018 20:29
Surr: 2-Fluorobiphenyl	75.7			43-125	%REC	1	04-Dec-2018 20:29
Surr: 4-Terphenyl-d14	105			32-125	%REC	1	04-Dec-2018 20:29
Surr: Nitrobenzene-d5	74.7			37-125	%REC	1	04-Dec-2018 20:29
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 04-Dec-2018	Analyst: JLJ	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	05-Dec-2018 13:14
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	05-Dec-2018 13:14
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	05-Dec-2018 13:14
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	05-Dec-2018 13:14
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	05-Dec-2018 13:14
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	05-Dec-2018 13:14
Aroclor 1260	0.52		0.010	0.042	mg/Kg-dry	2	05-Dec-2018 14:04
Surr: Decachlorobiphenyl	134			54-143	%REC	2	05-Dec-2018 14:04
Surr: Decachlorobiphenyl	113			54-143	%REC	1	05-Dec-2018 13:14
Surr: Tetrachloro-m-xylene	99.6			50-140	%REC	1	05-Dec-2018 13:14
Surr: Tetrachloro-m-xylene	107			50-140	%REC	2	05-Dec-2018 14:04
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 04-Dec-2018	Analyst: JCJ	
Arsenic	9.31		0.0846	0.604	mg/Kg-dry	1	05-Dec-2018 16:46
Cadmium	0.322	JR	0.0326	0.604	mg/Kg-dry	1	05-Dec-2018 16:46
Cobalt	14.3	JL	0.0181	0.604	mg/Kg-dry	1	05-Dec-2018 16:46
Iron	24,400		221	6040	mg/Kg-dry	100	05-Dec-2018 17:27
Lead	30.6		0.0157	0.604	mg/Kg-dry	1	05-Dec-2018 16:46
Manganese	1,480		5.19	60.4	mg/Kg-dry	100	05-Dec-2018 17:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.

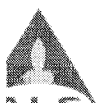
Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD08-04-20181203-14-57  
Collection Date: 03-Dec-2018 14:07

**ANALYTICAL REPORT**

WorkOrder: HS18120093  
Lab ID: HS18120093-08  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216		Method: ASTM D2216		Analyst: DFF			
Percent Moisture	21.4		0.0100	0.0100	wt%	1	04-Dec-2018 12:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/24/18

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120174

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120174; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA012-20181204-12-56</u>	<u>FJD09-03-20181204-12-56</u>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 24, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample DRA12-20181204-12-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided with the following exception:

ANALYTE	COMPOUND	%R/%R	AFFECTED SAMPLES	QUALIFIER FLAG
Aroclor 1260	Solid	159/OK	DRA12-20181204-12-56	None, sample ND

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA12-20181204-12-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Aroclor 1260 in one sample was analyzed at a 2-fold dilution. The reporting limit for Aroclor 1260 in this sample was elevated as a result of the dilution performed.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120174

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120174; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA012-20181204-12-56</u>	<u>FJD09-03-20181204-12-56</u>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 24, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”



## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120174

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120174; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA012-20181204-12-56</u>	<u>FJD09-03-20181204-12-56</u>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 24, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 50-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA012-20181204-12-56  
 Collection Date: 04-Dec-2018 15:20

**ANALYTICAL REPORT**  
 WorkOrder: HS18120174  
 Lab ID: HS18120174-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 06-Dec-2018		Analyst: GEY	
Acenaphthene	0.0073		0.00065	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Anthracene	0.015		0.00065	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Benz(a)anthracene	0.056		0.0021	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Benzo(a)pyrene	0.057		0.0013	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Benzo(b)fluoranthene	0.091		0.0015	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Benzo(g,h,i)perylene	0.040		0.00090	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Benzo(k)fluoranthene	0.033		0.0012	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Chrysene	0.059		0.0010	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Dibenz(a,h)anthracene	0.0094		0.0021	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Fluoranthene	0.089		0.0014	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Fluorene	0.0071		0.0014	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Indeno(1,2,3-cd)pyrene	0.041		0.0010	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Naphthalene	0.0099		0.00077	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Phenanthrene	0.055		0.0019	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Pyrene	0.098		0.00077	0.0043	mg/Kg-dry	1	08-Dec-2018 13:54
Surr: 2-Fluorobiphenyl	75.4			43-125	%REC	1	08-Dec-2018 13:54
Surr: 4-Terphenyl-d14	87.5			32-125	%REC	1	08-Dec-2018 13:54
Surr: Nitrobenzene-d5	76.9			37-125	%REC	1	08-Dec-2018 13:54
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 05-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0054	0.022	mg/Kg-dry	1	06-Dec-2018 10:38
Aroclor 1221	U		0.0072	0.022	mg/Kg-dry	1	06-Dec-2018 10:38
Aroclor 1232	U		0.0058	0.022	mg/Kg-dry	1	06-Dec-2018 10:38
Aroclor 1242	U		0.0076	0.022	mg/Kg-dry	1	06-Dec-2018 10:38
Aroclor 1248	U		0.0076	0.022	mg/Kg-dry	1	06-Dec-2018 10:38
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	06-Dec-2018 10:38
Aroclor 1260	U		0.0052	0.022	mg/Kg-dry	1	06-Dec-2018 10:38
Surr: Decachlorobiphenyl	120			54-143	%REC	1	06-Dec-2018 10:38
Surr: Tetrachloro-m-xylene	99.2			50-140	%REC	1	06-Dec-2018 10:38
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 05-Dec-2018		Analyst: JCJ	
Arsenic	7.01		0.0836	0.597	mg/Kg-dry	1	06-Dec-2018 00:31
Cadmium	0.350	✓ JQ	0.0322	0.597	mg/Kg-dry	1	06-Dec-2018 00:31
Cobalt	12.2		0.0179	0.597	mg/Kg-dry	1	06-Dec-2018 00:31
Iron	27,000		109	2990	mg/Kg-dry	50	06-Dec-2018 13:24
Lead	33.8		0.0155	0.597	mg/Kg-dry	1	06-Dec-2018 00:31
Manganese	1,180		2.57	29.9	mg/Kg-dry	50	06-Dec-2018 13:24
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	22.8		0.0100	0.0100	wt%	1	05-Dec-2018 16:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/10/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD09-03-20181204-12-56  
 Collection Date: 04-Dec-2018 15:23

**ANALYTICAL REPORT**  
 WorkOrder: HS18120174  
 Lab ID: HS18120174-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 08-Dec-2018	Analyst: GEY	
Acenaphthene	U		0.00064	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Anthracene	0.0025	JJQ	0.00064	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Benz(a)anthracene	0.021		0.0021	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Benzo(a)pyrene	0.030		0.0013	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Benzo(b)fluoranthene	0.063		0.0015	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Benzo(g,h,i)perylene	0.037		0.00090	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Benzo(k)fluoranthene	0.020		0.0012	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Chrysene	0.031		0.0010	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Dibenz(a,h)anthracene	0.0091		0.0021	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Fluoranthene	0.036		0.0014	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Fluorene	0.0039	JJQ	0.0014	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Indeno(1,2,3-cd)pyrene	0.036		0.0010	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Naphthalene	0.0027	JJQ	0.00077	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Phenanthrene	0.017		0.0019	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Pyrene	0.036		0.00077	0.0043	mg/Kg-dry	1	08-Dec-2018 13:35
Surr: 2-Fluorobiphenyl	55.4			43-125	%REC	1	08-Dec-2018 13:35
Surr: 4-Terphenyl-d14	83.5			32-125	%REC	1	08-Dec-2018 13:35
Surr: Nitrobenzene-d5	55.6			37-125	%REC	1	08-Dec-2018 13:35
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 05-Dec-2018	Analyst: JJJ	
Aroclor 1016	U		0.0054	0.021	mg/Kg-dry	1	06-Dec-2018 11:25
Aroclor 1221	U		0.0072	0.021	mg/Kg-dry	1	06-Dec-2018 11:25
Aroclor 1232	U		0.0058	0.021	mg/Kg-dry	1	06-Dec-2018 11:25
Aroclor 1242	U		0.0076	0.021	mg/Kg-dry	1	06-Dec-2018 11:25
Aroclor 1248	U		0.0076	0.021	mg/Kg-dry	1	06-Dec-2018 11:25
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	06-Dec-2018 11:25
Aroclor 1260	0.56		0.010	0.043	mg/Kg-dry	2	06-Dec-2018 11:44
Surr: Decachlorobiphenyl	137			54-143	%REC	2	06-Dec-2018 11:44
Surr: Decachlorobiphenyl	125			54-143	%REC	1	06-Dec-2018 11:25
Surr: Tetrachloro-m-xylene	108			50-140	%REC	1	06-Dec-2018 11:25
Surr: Tetrachloro-m-xylene	109			50-140	%REC	2	06-Dec-2018 11:44
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 05-Dec-2018	Analyst: JCJ	
Arsenic	6.49		0.0862	0.616	mg/Kg-dry	1	06-Dec-2018 00:33
Cadmium	0.252	JJQ	0.0333	0.616	mg/Kg-dry	1	06-Dec-2018 00:33
Cobalt	12.7		0.0185	0.616	mg/Kg-dry	1	06-Dec-2018 00:33
Iron	27,900		113	3080	mg/Kg-dry	50	06-Dec-2018 13:26
Lead	23.3		0.0160	0.616	mg/Kg-dry	1	06-Dec-2018 00:33
Manganese	1,140		2.65	30.8	mg/Kg-dry	50	06-Dec-2018 13:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/10/19



Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD09-03-20181204-12-56  
Collection Date: 04-Dec-2018 15:23

**ANALYTICAL REPORT**

WorkOrder: HS18120174  
Lab ID: HS18120174-02  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: DFF
Percent Moisture	22.6		0.0100	0.0100	wt%	1	05-Dec-2018 16:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/21/19

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120264

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120264; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA06-20181205-24-56</u>	<u>FJD08-01-20181205-12-56</u>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 29, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD08-01-20181205-12-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD08-01-20181205-12-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

11. Laboratory Contact:

The laboratory was contacted on January 24, 2019 regarding incorrect sample weights and volumes on a run log and quantitation report. An acceptable response was received on January 28, 2019.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER	SDG NUMBER	HS18120264
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120264; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

[illegible]

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski

DATE            January 29, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.



8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

The laboratory was contacted on January 24, 2019 regarding an incorrect sample weight on a quantitation report. An acceptable response was received on January 28, 2019.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120264

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120264; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA06-20181205-24-56</u>	<u>FJD08-01-20181205-12-56</u>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 24, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 50 or 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.


The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle R/ATX  
 Sample ID: DRA06-20181205-24-56  
 Collection Date: 05-Dec-2018 13:29

**ANALYTICAL REPORT**  
 WorkOrder: HS18120264  
 Lab ID: HS18120264-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 06-Dec-2018		Analyst: ACN
Acenaphthene	0.013		0.00063	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Acenaphthylene	0.0035	JTQ	0.0013	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Anthracene	0.012		0.00063	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Benz(a)anthracene	0.049		0.0020	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Benzo(a)pyrene	0.060		0.0013	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Benzo(b)fluoranthene	0.078		0.0015	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Benzo(g,h,i)perylene	0.054		0.00088	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Benzo(k)fluoranthene	0.031		0.0011	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Chrysene	0.058		0.0010	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Dibenz(a,h)anthracene	0.011		0.0020	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Fluoranthene	0.12		0.0014	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Fluorene	0.0086		0.0014	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Indeno(1,2,3-cd)pyrene	0.053		0.0010	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Naphthalene	0.022		0.00075	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Phenanthrene	0.084		0.0019	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Pyrene	0.11		0.00075	0.0041	mg/Kg-dry	1	07-Dec-2018 19:04
Surr: 2-Fluorobiphenyl	100			43-125	%REC	1	07-Dec-2018 19:04
Surr: 4-Terphenyl-d14	99.4			32-125	%REC	1	07-Dec-2018 19:04
Surr: Nitrobenzene-d5	83.6			37-125	%REC	1	07-Dec-2018 19:04
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 06-Dec-2018		Analyst: MBG
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	07-Dec-2018 11:53
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	07-Dec-2018 11:53
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	07-Dec-2018 11:53
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	07-Dec-2018 11:53
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	07-Dec-2018 11:53
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	07-Dec-2018 11:53
Aroclor 1260	0.067		0.0050	0.021	mg/Kg-dry	1	07-Dec-2018 11:53
Surr: Decachlorobiphenyl	98.6			54-143	%REC	1	07-Dec-2018 11:53
Surr: Tetrachloro-m-xylene	99.9			50-140	%REC	1	07-Dec-2018 11:53
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 06-Dec-2018		Analyst: JCJ
Arsenic	7.69		0.0812	0.580	mg/Kg-dry	1	07-Dec-2018 16:19
Cadmium	0.379	JTQ	0.0313	0.580	mg/Kg-dry	1	07-Dec-2018 16:19
Cobalt	7.91		0.0174	0.580	mg/Kg-dry	1	07-Dec-2018 16:19
Iron	14,000		2.12	58.0	mg/Kg-dry	1	07-Dec-2018 16:19
Lead	7.79		0.0151	0.580	mg/Kg-dry	1	07-Dec-2018 16:19
Manganese	1,110		2.49	29.0	mg/Kg-dry	50	07-Dec-2018 17:52
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	20.5		0.0100	0.0100	wt%	1	06-Dec-2018 17:44

Note: See Qualifiers Page for a list of qualifiers and their explanation.

 1/24/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RATX  
 Sample ID: FJD08-01-20181205-12-56  
 Collection Date: 05-Dec-2018 13:23

**ANALYTICAL REPORT**  
 WorkOrder: HS18120264  
 Lab ID: HS18120264-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 06-Dec-2018		Analyst: GEY
Acenaphthene	0.016		0.00063	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Acenaphthylene	0.0033	J JQ	0.0013	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Anthracene	0.0085		0.00063	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Benz(a)anthracene	0.028		0.0020	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Benzo(a)pyrene	0.030		0.0013	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Benzo(b)fluoranthene	0.044		0.0015	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Benzo(g,h,i)perylene	0.025		0.00088	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Benzo(k)fluoranthene	0.017		0.0011	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Chrysene	0.032		0.0010	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Dibenz(a,h)anthracene	0.0068		0.0020	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Fluoranthene	0.047		0.0014	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Fluorene	0.0095		0.0014	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Indeno(1,2,3-cd)pyrene	0.027		0.0010	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Naphthalene	0.032		0.00075	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Phenanthrene	0.037		0.0019	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Pyrene	0.061		0.00075	0.0041	mg/Kg-dry	1	08-Dec-2018 12:57
Surr: 2-Fluorobiphenyl	84.4			43-125	%REC	1	08-Dec-2018 12:57
Surr: 4-Terphenyl-d14	96.5			32-125	%REC	1	08-Dec-2018 12:57
Surr: Nitrobenzene-d5	79.2			37-125	%REC	1	08-Dec-2018 12:57
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 06-Dec-2018		Analyst: MBG
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	06-Dec-2018 20:00
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	06-Dec-2018 20:00
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	06-Dec-2018 20:00
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	06-Dec-2018 20:00
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	06-Dec-2018 20:00
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	06-Dec-2018 20:00
Aroclor 1260	U		0.0050	0.021	mg/Kg-dry	1	06-Dec-2018 20:00
Surr: Decachlorobiphenyl	123			54-143	%REC	1	06-Dec-2018 20:00
Surr: Tetrachloro-m-xylene	98.8			50-140	%REC	1	06-Dec-2018 20:00
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 06-Dec-2018		Analyst: JCJ
Arsenic	7.27		0.0854	0.610	mg/Kg-dry	1	07-Dec-2018 16:21
Cadmium	0.325	J JQ	0.0329	0.610	mg/Kg-dry	1	07-Dec-2018 16:21
Cobalt	17.8		0.0183	0.610	mg/Kg-dry	1	07-Dec-2018 16:21
Iron	30,300		223	6100	mg/Kg-dry	100	07-Dec-2018 17:55
Lead	29.0		0.0159	0.610	mg/Kg-dry	1	07-Dec-2018 16:21
Manganese	2,050		5.25	61.0	mg/Kg-dry	100	07-Dec-2018 17:55
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	21.1		0.0100	0.0100	wt%	1	06-Dec-2018 17:44

Note: See Qualifiers Page for a list of qualifiers and their explanation.





## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120726

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120726; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA028-20181212-16-56</u>	<u>FJD08-01-20181212-24-56</u>	<u>FJD08-04-20181212-24-56</u>
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 25, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample DRA028-20181212-16-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA028-20181212-16-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

11. Laboratory Contact:

No laboratory contact was required

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120726

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120726; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA028-20181212-16-56</u>	<u>FJD08-01-20181212-24-56</u>	<u>FJD08-04-20181212-24-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 29, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA028-20181212-16-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample DRA028-20181212-16-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

The laboratory was contacted on January 25, 2019 regarding an incorrect sample weight on a quantitation report. An acceptable response was received on January 28, 2019.



## 15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120726

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120726; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA028-20181212-16-56</u>	<u>FJD08-01-20181212-24-56</u>	<u>FJD08-04-20181212-24-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 25, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA028-20181212-16-56  
 Collection Date: 12-Dec-2018 11:15

**ANALYTICAL REPORT**  
 WorkOrder: HS18120726  
 Lab ID: HS18120726-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 13-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Benz(a)anthracene	0.0052		0.0021	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Benzo(a)pyrene	0.0077		0.0013	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Benzo(b)fluoranthene	0.014		0.0016	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Benzo(g,h,i)perylene	0.0083		0.00091	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Benzo(k)fluoranthene	0.0043		0.0012	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Chrysene	0.0065		0.0010	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Dibenz(a,h)anthracene	0.0042	JJR	0.0021	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Fluoranthene	0.0060		0.0014	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Indeno(1,2,3-cd)pyrene	0.0083		0.0010	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Phenanthrene	U		0.0019	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Pyrene	0.0062		0.00078	0.0043	mg/Kg-dry	1	13-Dec-2018 17:03
Surr: 2-Fluorobiphenyl	68.9			43-125	%REC	1	13-Dec-2018 17:03
Surr: 4-Terphenyl-d14	79.1			32-125	%REC	1	13-Dec-2018 17:03
Surr: Nitrobenzene-d5	72.4			37-125	%REC	1	13-Dec-2018 17:03
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 13-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0054	0.022	mg/Kg-dry	1	13-Dec-2018 17:13
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	13-Dec-2018 17:13
Aroclor 1232	U		0.0058	0.022	mg/Kg-dry	1	13-Dec-2018 17:13
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	13-Dec-2018 17:13
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	13-Dec-2018 17:13
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	13-Dec-2018 17:13
Aroclor 1260	0.42		0.0052	0.022	mg/Kg-dry	1	13-Dec-2018 17:13
Surr: Decachlorobiphenyl	123			54-143	%REC	1	13-Dec-2018 17:13
Surr: Tetrachloro-m-xylene	126			50-140	%REC	1	13-Dec-2018 17:13
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 12-Dec-2018		Analyst: JCJ	
Arsenic	6.71		0.0871	0.622	mg/Kg-dry	1	13-Dec-2018 20:34
Cadmium	0.406	JJR	0.0336	0.622	mg/Kg-dry	1	13-Dec-2018 20:34
Cobalt	16.1		0.0187	0.622	mg/Kg-dry	1	13-Dec-2018 20:34
Iron	30,500		228	6220	mg/Kg-dry	100	14-Dec-2018 13:54
Lead	31.8		0.0162	0.622	mg/Kg-dry	1	13-Dec-2018 20:34
Manganese	2,480		5.35	62.2	mg/Kg-dry	100	14-Dec-2018 13:54
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	23.6		0.0100	0.0100	wt%	1	13-Dec-2018 11:31

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8 1/25/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD08-01-20181212-24-56  
 Collection Date: 12-Dec-2018 07:37

**ANALYTICAL REPORT**  
 WorkOrder: HS18120726  
 Lab ID: HS18120726-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 13-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00064	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Anthracene	U		0.00064	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Benzo(a)pyrene	0.0015	JJQ	0.0013	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Benzo(b)fluoranthene	0.0028	JJQ	0.0015	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Benzo(g,h,i)perylene	0.0017	JJQ	0.00090	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Benzo(k)fluoranthene	U		0.0012	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Chrysene	0.0011	JJQ	0.0010	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Fluoranthene	U		0.0014	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Indeno(1,2,3-cd)pyrene	0.0014	JJQ	0.0010	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Naphthalene	U		0.00077	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Phenanthrene	U		0.0019	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Pyrene	0.00097	JJQ	0.00077	0.0043	mg/Kg-dry	1	13-Dec-2018 18:39
Surr: 2-Fluorobiphenyl	72.3			43-125	%REC	1	13-Dec-2018 18:39
Surr: 4-Terphenyl-d14	89.9			32-125	%REC	1	13-Dec-2018 18:39
Surr: Nitrobenzene-d5	74.5			37-125	%REC	1	13-Dec-2018 18:39
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 13-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0054	0.021	mg/Kg-dry	1	13-Dec-2018 18:01
Aroclor 1221	U		0.0072	0.021	mg/Kg-dry	1	13-Dec-2018 18:01
Aroclor 1232	U		0.0058	0.021	mg/Kg-dry	1	13-Dec-2018 18:01
Aroclor 1242	U		0.0076	0.021	mg/Kg-dry	1	13-Dec-2018 18:01
Aroclor 1248	U		0.0076	0.021	mg/Kg-dry	1	13-Dec-2018 18:01
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	13-Dec-2018 18:01
Aroclor 1260	0.021	JJQ	0.0051	0.021	mg/Kg-dry	1	13-Dec-2018 18:01
Surr: Decachlorobiphenyl	131			54-143	%REC	1	13-Dec-2018 18:01
Surr: Tetrachloro-m-xylene	133			50-140	%REC	1	13-Dec-2018 18:01
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 12-Dec-2018		Analyst: JCJ	
Arsenic	6.88		0.0882	0.630	mg/Kg-dry	1	13-Dec-2018 20:37
Cadmium	0.331	JJQ	0.0340	0.630	mg/Kg-dry	1	13-Dec-2018 20:37
Cobalt	20.4		0.0189	0.630	mg/Kg-dry	1	13-Dec-2018 20:37
Iron	33,600		231	6300	mg/Kg-dry	100	14-Dec-2018 13:57
Lead	22.9		0.0164	0.630	mg/Kg-dry	1	13-Dec-2018 20:37
Manganese	3,070		5.42	63.0	mg/Kg-dry	100	14-Dec-2018 13:57
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	23.4		0.0100	0.0100	wt%	1	13-Dec-2018 11:31

Note: See Qualifiers Page for a list of qualifiers and their explanation.

8/125/15

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD08-04-20181212-24-56  
 Collection Date: 12-Dec-2018 07:34

**ANALYTICAL REPORT**  
 WorkOrder: HS18120726  
 Lab ID: HS18120726-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 13-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Benzo(a)pyrene	U		0.0013	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Benzo(b)fluoranthene	U		0.0016	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Benzo(g,h,i)perylene	U		0.00091	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Benzo(k)fluoranthene	U		0.0012	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Chrysene	U		0.0010	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Fluoranthene	U		0.0014	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Phenanthrene	U		0.0019	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Pyrene	U		0.00078	0.0043	mg/Kg-dry	1	13-Dec-2018 17:41
Surr: 2-Fluorobiphenyl	68.0			43-125	%REC	1	13-Dec-2018 17:41
Surr: 4-Terphenyl-d14	79.5			32-125	%REC	1	13-Dec-2018 17:41
Surr: Nitrobenzene-d5	69.9			37-125	%REC	1	13-Dec-2018 17:41
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 13-Dec-2018		Analyst: JLJ	
Aroclor 1016	U		0.0054	0.022	mg/Kg-dry	1	13-Dec-2018 18:17
Aroclor 1221	U		0.0072	0.022	mg/Kg-dry	1	13-Dec-2018 18:17
Aroclor 1232	U		0.0058	0.022	mg/Kg-dry	1	13-Dec-2018 18:17
Aroclor 1242	U		0.0076	0.022	mg/Kg-dry	1	13-Dec-2018 18:17
Aroclor 1248	U		0.0076	0.022	mg/Kg-dry	1	13-Dec-2018 18:17
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	13-Dec-2018 18:17
Aroclor 1260	0.040		0.0052	0.022	mg/Kg-dry	1	13-Dec-2018 18:17
Surr: Decachlorobiphenyl	128			54-143	%REC	1	13-Dec-2018 18:17
Surr: Tetrachloro-m-xylene	125			50-140	%REC	1	13-Dec-2018 18:17
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 12-Dec-2018		Analyst: JCJ	
Arsenic	5.83		0.0844	0.603	mg/Kg-dry	1	13-Dec-2018 20:39
Cadmium	0.312	+ JQ	0.0326	0.603	mg/Kg-dry	1	13-Dec-2018 20:39
Cobalt	14.7		0.0181	0.603	mg/Kg-dry	1	13-Dec-2018 20:39
Iron	30,900		221	6030	mg/Kg-dry	100	14-Dec-2018 13:59
Lead	21.9		0.0157	0.603	mg/Kg-dry	1	13-Dec-2018 20:39
Manganese	1,690		5.19	60.3	mg/Kg-dry	100	14-Dec-2018 13:59
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	23.9		0.0100	0.0100	wt%	1	13-Dec-2018 11:31

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/12/19



## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120969

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120969; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA028-20181217-24-56</u>	<u>EAS06-20181217-24-56</u>	<u>EAS06-20181217-24-57</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 1, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample DRA028-20181217-24-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

## 8. Duplicates:

### A. Laboratory Duplicate Analysis:

Sample DRA028-20181217-24-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: EAS06-20181217-24-56/EAS06-20181217-24-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

## 9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

## 10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

## 11. Laboratory Contact:

The laboratory was contacted on January 25, 2019 regarding discrepancies between the sample weights and volumes used on the run log and quantitation reports. An acceptable response was received on January 31, 2019.

## 12. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120969

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120969; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA028-20181217-24-56</u>	<u>EAS06-20181217-24-56</u>	<u>EAS06-20181217-24-57</u>
_____	_____	_____
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_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 25, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA028-20181217-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: EAS06-20181217-24-56/EAS06-20181217-24-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met with the following exceptions:

FIELD DUPLICATE SAMPLE PAIR	COMPOUND	MATRIX	RPD	AFFECTED SAMPLES	QUALIFIER FLAG
EAS06-20181217-24-56/ EAS06-20181217-24-57	Benzo(b)fluoranthene Fluoranthene	Solid	* *	EAS06-20181217-24-56/ EAS06-20181217-24-57	JK JK

\*Sample concentrations less than five times the RL and absolute difference between the samples is greater than 3.5 times the RL.

9. Matrix Spike/Matrix Spike Duplicate:

Sample DRA028-20181217-24-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate with the following exceptions:

ANALYTE	MATRIX	%R/%R	QC LIMITS	AFFECTED SAMPLES	QUALIFIER FLAG
Benzo(b)fluoranthene	Solid	140/142	50-137%	DRA028-20181217-24-56	JH, benzo(b)fluoranthene

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were



present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

The benzo(b)fluoranthene and fluoranthene results in the field duplicate pair were estimated due to poor precision.

The benzo(b)fluoranthene result in one sample was estimated due to high MS/MSD recoveries.

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18120969

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18120969; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA028-20181217-24-56</u>	<u>EAS06-20181217-24-56</u>	<u>EAS06-20181217-24-57</u>
_____	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 25, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample DRA028-20181217-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met with the following exception:

ANALYTE	MATRIX	RPD	AFFECTED SAMPLES	QUALIFIER FLAG
Manganese	Solid	55.9	All	JK

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: EAS06-20181217-24-56/EAS06-20181217-24-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met with the following exceptions:

FIELD DUPLICATE SAMPLE PAIR	ANALYTE	MATRIX	RPD	AFFECTED SAMPLES	QUALIFIER FLAG
EAS06-20181217-24-56/ EAS06-20181217-24-57	Manganese	Solid	111	EAS06-20181217-24-56/ EAS06-20181217-24-57	JK

## 10. Spiked Sample Analysis:

Sample DRA028-20181217-24-56 underwent MS/MSD analysis for ICP metals for the solid matrix. The spike recoveries for the following analytes were outside of the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more:

ANALYTE	MATRIX	%R/%R	AFFECTED SAMPLES	QUALIFIER FLAG
Lead	Solid	155/OK	All	JH

The post digestion spike recovery was acceptable indicating a possible digestion problem. No further qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample DRA028-20181217-24-56 underwent serial dilution for the solid matrix for ICP metals. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the RL qualified “J” by the laboratory are qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 20 or 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

#### 13. Laboratory Contact

No laboratory contact was required.

#### 14. Overall Assessment:

The manganese result in all samples was estimated due to high MS/MSD RPD.

The lead result in all samples was estimated due to high MS recovery.

The manganese result in the field duplicate pair was estimated due to poor precision.

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA028-20181217-24-56  
 Collection Date: 17-Dec-2018 14:00

**ANALYTICAL REPORT**

WorkOrder: HS18120969  
 Lab ID: HS18120969-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 18-Dec-2018		Analyst: GEY	
Acenaphthene	0.015		0.00064	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Anthracene	0.0082		0.00064	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Benz(a)anthracene	0.0075		0.0021	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Benzo(a)pyrene	0.0062		0.0013	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Benzo(b)fluoranthene	0.0099	JH	0.0015	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Benzo(g,h,i)perylene	0.0042	JH	0.00090	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Benzo(k)fluoranthene	0.0043		0.0012	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Chrysene	0.0075		0.0010	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Dibenz(a,h)anthracene	0.0024	JH	0.0021	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Fluoranthene	0.023		0.0014	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Fluorene	0.0084		0.0014	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Indeno(1,2,3-cd)pyrene	0.0056		0.0010	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Naphthalene	0.016		0.00077	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Phenanthrene	0.040		0.0019	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Pyrene	0.017		0.00077	0.0042	mg/Kg-dry	1	18-Dec-2018 15:40
Surr: 2-Fluorobiphenyl	79.9			43-125	%REC	1	18-Dec-2018 15:40
Surr: 4-Terphenyl-d14	95.0			32-125	%REC	1	18-Dec-2018 15:40
Surr: Nitrobenzene-d5	78.2			37-125	%REC	1	18-Dec-2018 15:40
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 18-Dec-2018		Analyst: JBA	
Aroclor 1016	U		0.0054	0.021	mg/Kg-dry	1	18-Dec-2018 16:26
Aroclor 1221	U		0.0072	0.021	mg/Kg-dry	1	18-Dec-2018 16:26
Aroclor 1232	U		0.0058	0.021	mg/Kg-dry	1	18-Dec-2018 16:26
Aroclor 1242	U		0.0076	0.021	mg/Kg-dry	1	18-Dec-2018 16:26
Aroclor 1248	U		0.0076	0.021	mg/Kg-dry	1	18-Dec-2018 16:26
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	18-Dec-2018 16:26
Aroclor 1260	0.039		0.0051	0.021	mg/Kg-dry	1	18-Dec-2018 16:26
Surr: Decachlorobiphenyl	135			54-143	%REC	1	18-Dec-2018 16:26
Surr: Tetrachloro-m-xylene	133			50-140	%REC	1	18-Dec-2018 16:26
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 18-Dec-2018		Analyst: JCJ	
Arsenic	6.69		0.0828	0.591	mg/Kg-dry	1	19-Dec-2018 14:43
Cadmium	0.259	JH	0.0319	0.591	mg/Kg-dry	1	19-Dec-2018 14:43
Cobalt	12.9		0.0177	0.591	mg/Kg-dry	1	19-Dec-2018 14:43
Iron	29,800		43.3	1180	mg/Kg-dry	20	19-Dec-2018 16:00
Lead	25.8	JH	0.0154	0.591	mg/Kg-dry	1	19-Dec-2018 14:43
Manganese	1,280	JK	1.02	11.8	mg/Kg-dry	20	19-Dec-2018 16:00
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: JHD	
Percent Moisture	22.7		0.0100	0.0100	wt%	1	19-Dec-2018 09:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS06-20181217-24-56  
 Collection Date: 17-Dec-2018 14:05

**ANALYTICAL REPORT**  
 WorkOrder: HS18120969  
 Lab ID: HS18120969-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 18-Dec-2018</b>		<b>Analyst: GEY</b>	
Acenaphthene	U		0.00063	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Acenaphthylene	U		0.0013	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Anthracene	U		0.00063	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Benzo(a)pyrene	U		0.0013	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Benzo(b)fluoranthene	0.0019	JQL	0.0015	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Benzo(g,h,i)perylene	0.00098	JJP	0.00088	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Chrysene	0.0012	JJP	0.0010	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Fluoranthene	0.0022	JJP	0.0014	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Phenanthrene	0.0026	JJP	0.0019	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Pyrene	0.0018	JJP	0.00075	0.0041	mg/Kg-dry	1	18-Dec-2018 15:59
Surr: 2-Fluorobiphenyl	81.1			43-125	%REC	1	18-Dec-2018 15:59
Surr: 4-Terphenyl-d14	98.2			32-125	%REC	1	18-Dec-2018 15:59
Surr: Nitrobenzene-d5	76.3			37-125	%REC	1	18-Dec-2018 15:59
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 18-Dec-2018</b>		<b>Analyst: JBA</b>	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	18-Dec-2018 16:42
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	18-Dec-2018 16:42
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	18-Dec-2018 16:42
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	18-Dec-2018 16:42
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	18-Dec-2018 16:42
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	18-Dec-2018 16:42
Aroclor 1260	0.0089	JJP	0.0050	0.021	mg/Kg-dry	1	18-Dec-2018 16:42
Surr: Decachlorobiphenyl	129			54-143	%REC	1	18-Dec-2018 16:42
Surr: Tetrachloro-m-xylene	114			50-140	%REC	1	18-Dec-2018 16:42
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		<b>Prep: SW3050A / 18-Dec-2018</b>		<b>Analyst: JCJ</b>	
Arsenic	4.84		0.0823	0.588	mg/Kg-dry	1	19-Dec-2018 14:54
Cadmium	0.325	JJP	0.0317	0.588	mg/Kg-dry	1	19-Dec-2018 14:54
Cobalt	7.03		0.0176	0.588	mg/Kg-dry	1	19-Dec-2018 14:54
Iron	15,500		2.15	58.8	mg/Kg-dry	1	19-Dec-2018 14:54
Lead	13.2	JH	0.0153	0.588	mg/Kg-dry	1	19-Dec-2018 14:54
Manganese	434	JL	1.01	11.8	mg/Kg-dry	20	19-Dec-2018 16:07
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				<b>Analyst: JHD</b>	
Percent Moisture	20.8		0.0100	0.0100	wt%	1	19-Dec-2018 09:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.



5/1/25/19



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RATX  
 Sample ID: EAS06-20181217-24-57  
 Collection Date: 17-Dec-2018 14:05

**ANALYTICAL REPORT**  
 WorkOrder: HS18120969  
 Lab ID: HS18120969-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 18-Dec-2018		Analyst: GEY	
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Anthracene	0.0014	JR	0.00062	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Benz(a)anthracene	0.011		0.0020	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Benzo(a)pyrene	0.0057		0.0012	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Benzo(b)fluoranthene	0.017	JK	0.0015	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Benzo(g,h,i)perylene	0.0056		0.00087	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Benzo(k)fluoranthene	0.0052		0.0011	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Chrysene	0.013		0.0010	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Dibenz(a,h)anthracene	0.0022	JR	0.0020	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Fluoranthene	0.019	JK	0.0014	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Indeno(1,2,3-cd)pyrene	0.0066		0.0010	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Phenanthrene	0.0073		0.0019	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Pyrene	0.012		0.00075	0.0041	mg/Kg-dry	1	18-Dec-2018 16:18
Surr: 2-Fluorobiphenyl	81.8			43-125	%REC	1	18-Dec-2018 16:18
Surr: 4-Terphenyl-d14	93.0			32-125	%REC	1	18-Dec-2018 16:18
Surr: Nitrobenzene-d5	79.4			37-125	%REC	1	18-Dec-2018 16:18
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 18-Dec-2018		Analyst: JBA	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	18-Dec-2018 16:58
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	18-Dec-2018 16:58
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	18-Dec-2018 16:58
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	18-Dec-2018 16:58
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	18-Dec-2018 16:58
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	18-Dec-2018 16:58
Aroclor 1260	0.045		0.0050	0.021	mg/Kg-dry	1	18-Dec-2018 16:58
Surr: Decachlorobiphenyl	127			54-143	%REC	1	18-Dec-2018 16:58
Surr: Tetrachloro-m-xylene	110			50-140	%REC	1	18-Dec-2018 16:58
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 18-Dec-2018		Analyst: JCJ	
Arsenic	4.61		0.0841	0.601	mg/Kg-dry	1	19-Dec-2018 14:56
Cadmium	0.301	JR	0.0324	0.601	mg/Kg-dry	1	19-Dec-2018 14:56
Cobalt	7.39		0.0180	0.601	mg/Kg-dry	1	19-Dec-2018 14:56
Iron	17,800		2.20	60.1	mg/Kg-dry	1	19-Dec-2018 14:56
Lead	12.7	JH	0.0156	0.601	mg/Kg-dry	1	19-Dec-2018 14:56
Manganese	1,510	JK	5.17	60.1	mg/Kg-dry	100	19-Dec-2018 16:09
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: JHD	
Percent Moisture	20.2		0.0100	0.0100	wt%	1	19-Dec-2018 09:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18121115

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18121115; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polychlorinated Biphenyl Compounds (PCBs) and Synthetic Precipitation Leaching Procedure (SPLP) PCBs by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD03-06-20181219-24-56</u>	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 1, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**. Samples were extracted for SPLP PCBs using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. All SPLP samples were extracted within the required holding time of less than 14 days for PCBs. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD03-06-20181219-24-56 underwent MS analysis for the SPLP matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD):

The laboratory analyzed an LCS and/or LCSD and recoveries and relative percent difference (RPD) values were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

11. Laboratory Contact:

The laboratory was contacted on January 25, 2019 regarding discrepancies between the sample weights and volumes used on the run log and quantitation reports. An acceptable response was received on January 31, 2019. In addition, the laboratory provided the missing TCLP PCB raw data.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18121115

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18121115; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD03-06-20181219-24-56</u>	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 25, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.



8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS18121115

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS18121115; Frank J. Doyle Salvage Removal Action. One sample was analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) and Synthetic Precipitation Leaching Procedure (SPLP) metals (Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD03-06-20181219-24-56</u>	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE January 28, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**. Samples were extracted for SPLP metals using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data. All SPLP samples were extracted within the required holding time of less than 180 days for metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample FJD03-06-20181219-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for Mn for the SPLP matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample FJD03-06-20181219-24-56 underwent MS/MSD analysis for Mn for the SPLP matrix. The spike recoveries for the all analytes were within the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more. The post digestion spike recoveries were acceptable. No qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample FJD03-06-20181219-24-56 underwent serial dilution for Mn for the SPLP matrix. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

## 13. Laboratory Contact

No laboratory contact was required.

## 14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-06-20181219-24-56  
 Collection Date: 19-Dec-2018 08:38

**ANALYTICAL REPORT**  
 WorkOrder: HS18121115  
 Lab ID: HS18121115-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>			<b>Prep: SW3541 / 20-Dec-2018</b>		<b>Analyst: GEY</b>
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Benzo(a)pyrene	U		0.0013	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Benzo(b)fluoranthene	U		0.0016	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Benzo(g,h,i)perylene	U		0.00091	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Benzo(k)fluoranthene	U		0.0012	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Chrysene	U		0.0010	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Fluoranthene	U		0.0014	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Naphthalene	0.0020	✓	0.00078	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Phenanthrene	U		0.0020	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Pyrene	U		0.00078	0.0043	mg/Kg-dry	1	22-Dec-2018 03:18
Surr: 2-Fluorobiphenyl	58.0			43-125	%REC	1	22-Dec-2018 03:18
Surr: 4-Terphenyl-d14	63.9			32-125	%REC	1	22-Dec-2018 03:18
Surr: Nitrobenzene-d5	55.4			37-125	%REC	1	22-Dec-2018 03:18
<b>SPLP PCBs BY SW8082A</b>		<b>Method: SW1312/8082</b>		<b>Leache: SW1312 / 27-Dec-2018</b>	<b>Prep: SW3510C/3665A / 27-Dec-2018</b>		<b>Analyst: JBA</b>
Aroclor 1016	U		0.10	0.52	ug/L	1	28-Dec-2018 07:54
Aroclor 1221	U		0.10	0.52	ug/L	1	28-Dec-2018 07:54
Aroclor 1232	U		0.10	0.52	ug/L	1	28-Dec-2018 07:54
Aroclor 1242	U		0.10	0.52	ug/L	1	28-Dec-2018 07:54
Aroclor 1248	U		0.10	0.52	ug/L	1	28-Dec-2018 07:54
Aroclor 1254	U		0.10	0.52	ug/L	1	28-Dec-2018 07:54
Aroclor 1260	U		0.10	0.52	ug/L	1	28-Dec-2018 07:54
Surr: Decachlorobiphenyl	100			30-150	%REC	1	28-Dec-2018 07:54
Surr: Tetrachloro-m-xylene	104			30-150	%REC	1	28-Dec-2018 07:54
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>			<b>Prep: SW3541/3665A / 20-Dec-2018</b>		<b>Analyst: JBA</b>
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	21-Dec-2018 02:59
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	21-Dec-2018 02:59
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	21-Dec-2018 02:59
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	21-Dec-2018 02:59
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	21-Dec-2018 02:59
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	21-Dec-2018 02:59
Aroclor 1260	0.072		0.0052	0.022	mg/Kg-dry	1	21-Dec-2018 02:59
Surr: Decachlorobiphenyl	115			54-143	%REC	1	21-Dec-2018 02:59
Surr: Tetrachloro-m-xylene	112			50-140	%REC	1	21-Dec-2018 02:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD03-06-20181219-24-56  
 Collection Date: 19-Dec-2018 08:38

**ANALYTICAL REPORT**

WorkOrder: HS18121115  
 Lab ID: HS18121115-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>SPLP METALS BY SW6020A</b>							
	Method: SW6020		Leache: SW1312 / 27-Dec-2018		Prep: SW3010A / 27-Dec-2018		Analyst: ALR
Manganese	0.00837		0.000700	0.00500	mg/L	1	02-Jan-2019 18:56
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 20-Dec-2018		Analyst: ALR
Arsenic	4.49		0.0880	0.629	mg/Kg-dry	1	20-Dec-2018 22:42
Cadmium	0.348	+ JQ	0.0340	0.629	mg/Kg-dry	1	20-Dec-2018 22:42
Cobalt	7.52		0.0189	0.629	mg/Kg-dry	1	20-Dec-2018 22:42
Iron	14,900		2.30	62.9	mg/Kg-dry	1	20-Dec-2018 22:42
Lead	10.0		0.0163	0.629	mg/Kg-dry	1	20-Dec-2018 22:42
Manganese	985		2.70	31.4	mg/Kg-dry	50	21-Dec-2018 13:47
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: JHD
Percent Moisture	24.2		0.0100	0.0100	wt%	1	20-Dec-2018 14:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/1/2019

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010219

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010219; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) and Synthetic Precipitation Leaching Procedure (SPLP) PCBs by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA26-20190107-12-56</u>	<u>EAS07-20190107-36-56</u>	<u>EAS08-20190107-36-56</u>
<u>FJD04-07-20190107-36-56</u>		

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 4, 2019



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**. Samples were extracted for SPLP PCBs using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. All SPLP samples were extracted within the required holding time of less than 14 days for PCBs. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided or were diluted out. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample DRA26-20190107-12-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. Sample EAS07-20190107-36-56 underwent MS analysis for the SPLP matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA26-20190107-12-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD):

The laboratory analyzed an LCS and/or LCSD and recoveries and relative percent difference (RPD) values were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Some PCB samples were analyzed at a dilution for some compounds. Reporting limits for these compounds in these samples were elevated as a result of the dilutions performed.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER	<u>20600.012.001.1175.01</u>	TDD NUMBER	<u>0001/18-175</u>
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PROJECT NUMBER	SDG NUMBER	HS19010219
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010219; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

[illegible]

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019

DATE February 8, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample EAS07-20190107-36-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample EAS07-20190107-36-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

The laboratory was contacted on February 4, 2019 regarding an incorrect sample weight on a run long and quantitation report for one sample. An acceptable response was received on February 7, 2019.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.



## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010219

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010219; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) and Synthetic Precipitation Leaching Procedure (SPLP) metals (Cd, Mn, and/or Ag) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA26-20190107-12-56</u>	<u>EAS07-20190107-36-56</u>	<u>EAS08-20190107-36-56</u>
<u>FJD04-07-20190107-36-56</u>	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**. Samples were extracted for SPLP metals using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data. All SPLP samples were extracted within the required holding time of less than 180 days for metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample EAS07-20190107-36-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for Cd, Mn, & Ag for the SPLP matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample EAS07-20190107-36-56 underwent MS/MSD analysis for Cd, Mn, & Ag for the SPLP matrix. The spike recoveries for the all analytes were within the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more. The post digestion spike recoveries were acceptable. No qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample EAS07-20190107-36-56 underwent serial dilution for Cd, Mn, & Ag for the SPLP matrix. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Some ICP metals analytes in some samples were analyzed at a 20, 50, 100, or 200-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

## 13. Laboratory Contact

The laboratory was contacted on February 4, 2019 regarding the lack of raw data for SPLP metals. An acceptable response was received on February 7, 2019.

## 14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

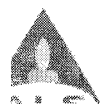
The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA26-20190107-12-56  
 Collection Date: 07-Jan-2019 12:49

**ANALYTICAL REPORT**  
 WorkOrder: HS19010219  
 Lab ID: HS19010219-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep SW3541 / 08-Jan-2019		Analyst: GEY	
Acenaphthene	0.0016	↓ JQ	0.00065	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Acenaphthylene	0.0020	↓ JQ	0.0013	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Anthracene	0.0062		0.00065	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Benz(a)anthracene	0.12		0.0021	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Benzo(a)pyrene	0.19		0.0013	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Benzo(b)fluoranthene	0.30		0.0016	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Benzo(g,h,i)perylene	0.17		0.00091	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Benzo(k)fluoranthene	0.12		0.0012	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Chrysene	0.18		0.0010	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Dibenz(a,h)anthracene	0.035		0.0021	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Fluoranthene	0.21		0.0014	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Fluorene	0.0016	↓ JQ	0.0014	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Indeno(1,2,3-cd)pyrene	0.18		0.0010	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Phenanthrene	0.038		0.0019	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Pyrene	0.21		0.00078	0.0043	mg/Kg-dry	1	09-Jan-2019 15:10
Surr: 2-Fluorobiphenyl	65.2			43-125	%REC	1	09-Jan-2019 15:10
Surr: 4-Terphenyl-d14	68.7			32-125	%REC	1	09-Jan-2019 15:10
Surr: Nitrobenzene-d5	63.5			37-125	%REC	1	09-Jan-2019 15:10
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep SW3541/3665A / 08-Jan-2019		Analyst: JLJ	
Aroclor 1016	U		0.0056	0.022	mg/Kg-dry	1	09-Jan-2019 12:28
Aroclor 1221	U		0.0074	0.022	mg/Kg-dry	1	09-Jan-2019 12:28
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	09-Jan-2019 12:28
Aroclor 1242	U		0.0078	0.022	mg/Kg-dry	1	09-Jan-2019 12:28
Aroclor 1248	U		0.0078	0.022	mg/Kg-dry	1	09-Jan-2019 12:28
Aroclor 1254	U		0.0062	0.022	mg/Kg-dry	1	09-Jan-2019 12:28
Aroclor 1260	0.029		0.0053	0.022	mg/Kg-dry	1	09-Jan-2019 12:28
Surr: Decachlorobiphenyl	83.5			54-143	%REC	1	09-Jan-2019 12:28
Surr: Tetrachloro-m-xylene	79.6			50-140	%REC	1	09-Jan-2019 12:28
<b>METALS BY SW6020A</b>		Method: SW6020		Prep SW3050A / 08-Jan-2019		Analyst: JHD	
Arsenic	7.15		0.0889	0.635	mg/Kg-dry	1	09-Jan-2019 15:18
Cadmium	0.283	↓ JQ	0.0343	0.635	mg/Kg-dry	1	09-Jan-2019 15:18
Cobalt	8.96		0.0191	0.635	mg/Kg-dry	1	09-Jan-2019 15:18
Iron	24,000		46.5	1270	mg/Kg-dry	20	09-Jan-2019 16:11
Lead	28.6		0.0165	0.635	mg/Kg-dry	1	09-Jan-2019 15:18
Manganese	950		1.09	12.7	mg/Kg-dry	20	09-Jan-2019 16:11
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	25.1		0.0100	0.0100	wt%	1	08-Jan-2019 10:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/24/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle R/ATX  
 Sample ID: EAS07-20190107-36-56  
 Collection Date: 07-Jan-2019 12:37

**ANALYTICAL REPORT**  
 WorkOrder: HS19010219  
 Lab ID: HS19010219-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		Prep: SW3541 / 08-Jan-2019		Analyst: GEY	
Acenaphthene	U		0.00060	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Anthracene	0.0012	JR	0.00060	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Benz(a)anthracene	0.0030	JR	0.0019	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Benzo(a)pyrene	0.0030	JR	0.0012	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Benzo(b)fluoranthene	0.0034	JR	0.0014	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Benzo(g,h,i)perylene	0.0033	JR	0.00084	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Benzo(k)fluoranthene	0.0025	JR	0.0011	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Chrysene	0.0038	JR	0.00096	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Fluoranthene	0.0068		0.0013	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Indeno(1,2,3-cd)pyrene	0.0024	JR	0.00096	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Naphthalene	U		0.00072	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Phenanthrene	0.0047		0.0018	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Pyrene	0.0060		0.00072	0.0040	mg/Kg-dry	1	08-Jan-2019 19:02
Surr: 2-Fluorobiphenyl	70.8			43-125	%REC	1	08-Jan-2019 19:02
Surr: 4-Terphenyl-d14	78.3			32-125	%REC	1	08-Jan-2019 19:02
Surr: Nitrobenzene-d5	69.9			37-125	%REC	1	08-Jan-2019 19:02
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		Prep: SW3541/3665A / 08-Jan-2019		Analyst: JLJ	
Aroclor 1016	U		0.0050	0.020	mg/Kg-dry	1	09-Jan-2019 12:44
Aroclor 1221	U		0.0067	0.020	mg/Kg-dry	1	09-Jan-2019 12:44
Aroclor 1232	U		0.0054	0.020	mg/Kg-dry	1	09-Jan-2019 12:44
Aroclor 1242	U		0.0070	0.020	mg/Kg-dry	1	09-Jan-2019 12:44
Aroclor 1248	U		0.0070	0.020	mg/Kg-dry	1	09-Jan-2019 12:44
Aroclor 1254	U		0.0056	0.020	mg/Kg-dry	1	09-Jan-2019 12:44
Aroclor 1260	9.3		0.48	2.0	mg/Kg-dry	100	09-Jan-2019 14:04
Surr: Decachlorobiphenyl	0	JS		54-143	%REC	100	09-Jan-2019 14:04
Surr: Decachlorobiphenyl	98.4			54-143	%REC	1	09-Jan-2019 12:44
Surr: Tetrachloro-m-xylene	88.0			50-140	%REC	1	09-Jan-2019 12:44
Surr: Tetrachloro-m-xylene	0	JS		50-140	%REC	100	09-Jan-2019 14:04
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		Prep: SW3050A / 08-Jan-2019		Analyst: JHD	
Arsenic	6.07		0.0827	0.590	mg/Kg-dry	1	09-Jan-2019 15:20
Cadmium	0.665		0.0319	0.590	mg/Kg-dry	1	09-Jan-2019 15:20
Cobalt	25.5		0.0177	0.590	mg/Kg-dry	1	09-Jan-2019 15:20
Iron	17,300		2.16	59.0	mg/Kg-dry	1	09-Jan-2019 15:20
Lead	25.3		0.0154	0.590	mg/Kg-dry	1	09-Jan-2019 15:20
Manganese	5,920		10.2	118	mg/Kg-dry	200	09-Jan-2019 16:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: EAS07-20190107-36-56  
Collection Date: 07-Jan-2019 12:37

**ANALYTICAL REPORT**  
WorkOrder: HS19010219  
Lab ID: HS19010219-02  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216					Analyst: DFF	
Percent Moisture	17.2		0.0100	0.0100	wt%	1	08-Jan-2019 10:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.



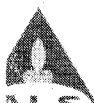
2 01/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS07-20190107-36-56  
 Collection Date: 07-Jan-2019 12:37

**ANALYTICAL REPORT**  
 WorkOrder: HS19010219  
 Lab ID: HS19010219-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>SPLP PCBS BY SW8082A</b>							
	Method: SW1312/8082		Leache: SW1312 / 11-Jan-2019		Prep: SW3510C/3665A / 11-Jan-2019		Analyst: JLJ
Aroclor 1016	U		0.12	0.58	ug/L	1	11-Jan-2019 17:58
Aroclor 1221	U		0.12	0.58	ug/L	1	11-Jan-2019 17:58
Aroclor 1232	U		0.12	0.58	ug/L	1	11-Jan-2019 17:58
Aroclor 1242	U		0.12	0.58	ug/L	1	11-Jan-2019 17:58
Aroclor 1248	U		0.12	0.58	ug/L	1	11-Jan-2019 17:58
Aroclor 1254	U		0.12	0.58	ug/L	1	11-Jan-2019 17:58
<b>Aroclor 1260</b>	<b>3.0</b>		<b>0.12</b>	<b>0.58</b>	<b>ug/L</b>	<b>1</b>	<b>11-Jan-2019 17:58</b>
Surr: Decachlorobiphenyl	95.0			30-150	%REC	1	11-Jan-2019 17:58
Surr: Tetrachloro-m-xylene	90.8			30-150	%REC	1	11-Jan-2019 17:58
<b>SPLP METALS BY SW6020A</b>							
	Method: SW6020		Leache: SW1312 / 11-Jan-2019		Prep: SW3010A / 14-Jan-2019		Analyst: JHD
<b>Manganese</b>	<b>0.0919</b>		<b>0.000700</b>	<b>0.00500</b>	<b>mg/L</b>	<b>1</b>	<b>15-Jan-2019 22:47</b>

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS08-20190107-36-56  
 Collection Date: 07-Jan-2019 12:31

**ANALYTICAL REPORT**  
 WorkOrder: HS19010219  
 Lab ID: HS19010219-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 08-Jan-2019		Analyst: GEY
Acenaphthene	U		0.00060	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Acenaphthylene	U		0.0012	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Anthracene	0.0012	JS	0.00060	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Benz(a)anthracene	U		0.0019	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Benzo(a)pyrene	U		0.0012	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Benzo(b)fluoranthene	0.0025	JS	0.0014	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Benzo(g,h,i)perylene	0.0023	JS	0.00084	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Benzo(k)fluoranthene	0.0017	JS	0.0011	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Chrysene	0.0014	JS	0.00096	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Dibenz(a,h)anthracene	U		0.0019	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Fluoranthene	0.0016	JS	0.0013	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Fluorene	U		0.0013	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Indeno(1,2,3-cd)pyrene	0.0012	JS	0.00096	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Naphthalene	U		0.00072	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Phenanthrene	U		0.0018	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Pyrene	0.0018	JS	0.00072	0.0039	mg/Kg-dry	1	08-Jan-2019 20:00
Surr: 2-Fluorobiphenyl	68.7			43-125	%REC	1	08-Jan-2019 20:00
Surr: 4-Terphenyl-d14	76.6			32-125	%REC	1	08-Jan-2019 20:00
Surr: Nitrobenzene-d5	63.8			37-125	%REC	1	08-Jan-2019 20:00
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 08-Jan-2019		Analyst: JLJ
Aroclor 1016	U		0.0050	0.020	mg/Kg-dry	1	09-Jan-2019 13:00
Aroclor 1221	U		0.0067	0.020	mg/Kg-dry	1	09-Jan-2019 13:00
Aroclor 1232	U		0.0054	0.020	mg/Kg-dry	1	09-Jan-2019 13:00
Aroclor 1242	U		0.0070	0.020	mg/Kg-dry	1	09-Jan-2019 13:00
Aroclor 1248	U		0.0070	0.020	mg/Kg-dry	1	09-Jan-2019 13:00
Aroclor 1254	U		0.0056	0.020	mg/Kg-dry	1	09-Jan-2019 13:00
Aroclor 1260	32		0.48	2.0	mg/Kg-dry	100	09-Jan-2019 14:20
Surr: Decachlorobiphenyl	0	JS		54-143	%REC	100	09-Jan-2019 14:20
Surr: Decachlorobiphenyl	180	S		54-143	%REC	1	09-Jan-2019 13:00
Surr: Tetrachloro-m-xylene	102			50-140	%REC	1	09-Jan-2019 13:00
Surr: Tetrachloro-m-xylene	0	JS		50-140	%REC	100	09-Jan-2019 14:20
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 08-Jan-2019		Analyst: JHD
Arsenic	5.50		0.0809	0.578	mg/Kg-dry	1	09-Jan-2019 15:22
Cadmium	0.326	JS	0.0312	0.578	mg/Kg-dry	1	09-Jan-2019 15:22
Cobalt	11.2		0.0173	0.578	mg/Kg-dry	1	09-Jan-2019 15:22
Iron	19,600		2.12	57.8	mg/Kg-dry	1	09-Jan-2019 15:22
Lead	15.5		0.0150	0.578	mg/Kg-dry	1	09-Jan-2019 15:22
Manganese	1,850		4.97	57.8	mg/Kg-dry	100	09-Jan-2019 16:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: EAS08-20190107-36-56  
Collection Date: 07-Jan-2019 12:31

**ANALYTICAL REPORT**

WorkOrder: HS19010219  
Lab ID: HS19010219-04  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216		Method: ASTM D2216		Analyst: DFF			
Percent Moisture	16.7		0.0100	0.0100	wt%	1	08-Jan-2019 10:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.



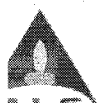
2/14/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-07-20190107-36-56  
 Collection Date: 07-Jan-2019 12:43

**ANALYTICAL REPORT**  
 WorkOrder: HS19010219  
 Lab ID: HS19010219-05  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 08-Jan-2019		Analyst: GEY
Acenaphthene	U		0.00059	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Acenaphthylene	U		0.0012	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Anthracene	U		0.00059	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Benz(a)anthracene	0.0025	J	0.0019	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Benzo(a)pyrene	0.0028	J	0.0012	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Benzo(b)fluoranthene	0.0034	J	0.0014	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Benzo(g,h,i)perylene	0.0044		0.00082	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Benzo(k)fluoranthene	0.0022	J	0.0011	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Chrysene	0.0026	J	0.00094	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Dibenz(a,h)anthracene	U		0.0019	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Fluoranthene	0.0034	J	0.0013	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Fluorene	U		0.0013	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Indeno(1,2,3-cd)pyrene	0.0030	J	0.00094	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Naphthalene	U		0.00070	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Phenanthrene	0.0024	J	0.0018	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Pyrene	0.0030	J	0.00070	0.0039	mg/Kg-dry	1	08-Jan-2019 20:19
Surr: 2-Fluorobiphenyl	69.6			43-125	%REC	1	08-Jan-2019 20:19
Surr: 4-Terphenyl-d14	76.0			32-125	%REC	1	08-Jan-2019 20:19
Surr: Nitrobenzene-d5	68.2			37-125	%REC	1	08-Jan-2019 20:19
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 08-Jan-2019		Analyst: JJJ
Aroclor 1016	U		0.0050	0.020	mg/Kg-dry	1	09-Jan-2019 13:16
Aroclor 1221	U		0.0067	0.020	mg/Kg-dry	1	09-Jan-2019 13:16
Aroclor 1232	U		0.0053	0.020	mg/Kg-dry	1	09-Jan-2019 13:16
Aroclor 1242	U		0.0070	0.020	mg/Kg-dry	1	09-Jan-2019 13:16
Aroclor 1248	U		0.0070	0.020	mg/Kg-dry	1	09-Jan-2019 13:16
Aroclor 1254	U		0.0056	0.020	mg/Kg-dry	1	09-Jan-2019 13:16
Aroclor 1260	2.7		0.048	0.20	mg/Kg-dry	10	09-Jan-2019 14:36
Surr: Decachlorobiphenyl	113	J		54-143	%REC	10	09-Jan-2019 14:36
Surr: Decachlorobiphenyl	92.2			54-143	%REC	1	09-Jan-2019 13:16
Surr: Tetrachloro-m-xylene	80.9			50-140	%REC	1	09-Jan-2019 13:16
Surr: Tetrachloro-m-xylene	92.4	J		50-140	%REC	10	09-Jan-2019 14:36
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 08-Jan-2019		Analyst: JHD
Arsenic	3.22		0.0765	0.547	mg/Kg-dry	1	09-Jan-2019 15:25
Cadmium	0.270	J	0.0295	0.547	mg/Kg-dry	1	09-Jan-2019 15:25
Cobalt	4.87		0.0164	0.547	mg/Kg-dry	1	09-Jan-2019 15:25
Iron	9,920		2.00	54.7	mg/Kg-dry	1	09-Jan-2019 15:25
Lead	7.42		0.0142	0.547	mg/Kg-dry	1	09-Jan-2019 15:25
Manganese	990		2.35	27.3	mg/Kg-dry	50	09-Jan-2019 16:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD04-07-20190107-36-56  
Collection Date: 07-Jan-2019 12:43

**ANALYTICAL REPORT**

WorkOrder: HS19010219  
Lab ID: HS19010219-05  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216					Analyst: DFF	
Percent Moisture	15.9		0.0100	0.0100	wt%	1	08-Jan-2019 10:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-07-20190107-36-56  
 Collection Date: 07-Jan-2019 12:43

**ANALYTICAL REPORT**

WorkOrder: HS19010219  
 Lab ID: HS19010219-06  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>SPLP PCBS BY SW8082A</b> Method: SW1312/8082      Leache: SW1312 / 11-Jan-2019      Prep: SW3510C/3665A / 11-Jan-2019      Analyst: JJJ							
Aroclor 1016	U		0.12	0.59	ug/L	1	11-Jan-2019 18:30
Aroclor 1221	U		0.12	0.59	ug/L	1	11-Jan-2019 18:30
Aroclor 1232	U		0.12	0.59	ug/L	1	11-Jan-2019 18:30
Aroclor 1242	U		0.12	0.59	ug/L	1	11-Jan-2019 18:30
Aroclor 1248	U		0.12	0.59	ug/L	1	11-Jan-2019 18:30
Aroclor 1254	U		0.12	0.59	ug/L	1	11-Jan-2019 18:30
Aroclor 1260	0.42	✓ JJJ	0.12	0.59	ug/L	1	11-Jan-2019 18:30
Surr: Decachlorobiphenyl	86.9			30-150	%REC	1	11-Jan-2019 18:30
Surr: Tetrachloro-m-xylene	90.1			30-150	%REC	1	11-Jan-2019 18:30
<b>SPLP METALS BY SW6020A</b> Method: SW6020      Leache: SW1312 / 11-Jan-2019      Prep: SW3010A / 14-Jan-2019      Analyst: JHD							
Cadmium	U		0.000200	0.00200	mg/L	1	15-Jan-2019 22:57
Manganese	0.112		0.000700	0.00500	mg/L	1	15-Jan-2019 22:57
Silver	U		0.000200	0.00500	mg/L	1	15-Jan-2019 22:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010410

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010410; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA02-20190109-12-56</u>	<u>DRA03-20190109-12-56</u>	<u>DRA03-20190109-12-57</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 4, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided or were diluted out. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.



8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA03-20190109-12-56/DRA03-20190109-12-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met with the following exception:

FIELD DUPLICATE SAMPLE PAIR	COMPOUND	MATRIX	RPD	AFFECTED SAMPLES	QUALIFIER FLAG
DRA03-20190109-12-56/ DRA03-20190109-12-57	Aroclor 1260	Solid	111	DRA03-20190109-12-56/ DRA03-20190109-12-57	JK

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Some PCB samples were analyzed at a dilution for some compounds. Reporting limits for these compounds in these samples were elevated as a result of the dilutions performed.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The Aroclor 1260 result in the field duplicate pair was estimated due to poor precision.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010410

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010410; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA02-20190109-12-56</u>	<u>DRA03-20190109-12-56</u>	<u>DRA03-20190109-12-57</u>
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 4, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA03-20190109-12-56/DRA03-20190109-12-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010410

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010410; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA02-20190109-12-56</u>	<u>DRA03-20190109-12-56</u>	<u>DRA03-20190109-12-57</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA03-20190109-12-56/DRA03-20190109-12-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution for the solid matrix for ICP metals. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Some ICP metals analytes in some samples were analyzed at a 50-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA02-20190109-12-56  
 Collection Date: 09-Jan-2019 14:47

**ANALYTICAL REPORT**  
 WorkOrder: HS19010410  
 Lab ID: HS19010410-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
			Method: SW8270		Prep: SW3541 / 10-Jan-2019		Analyst: GEY
Acenaphthene	U		0.00067	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Acenaphthylene	U		0.0013	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Anthracene	U		0.00067	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Benz(a)anthracene	0.0022	J	0.0022	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Benzo(a)pyrene	0.0022	J	0.0013	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Benzo(b)fluoranthene	0.0025	J	0.0016	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Benzo(g,h,i)perylene	0.0021	J	0.00094	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Benzo(k)fluoranthene	0.0017	J	0.0012	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Chrysene	0.0028	J	0.0011	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Dibenz(a,h)anthracene	U		0.0022	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Fluoranthene	0.0044	J	0.0015	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Fluorene	U		0.0015	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Indeno(1,2,3-cd)pyrene	0.0019	J	0.0011	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Naphthalene	U		0.00081	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Phenanthrene	U		0.0020	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Pyrene	0.0035	J	0.00081	0.0044	mg/Kg-dry	1	11-Jan-2019 14:53
Surr: 2-Fluorobiphenyl	66.0			43-125	%REC	1	11-Jan-2019 14:53
Surr: 4-Terphenyl-d14	74.3			32-125	%REC	1	11-Jan-2019 14:53
Surr: Nitrobenzene-d5	63.2			37-125	%REC	1	11-Jan-2019 14:53
<b>PCBS BY SW8082A</b>							
			Method: SW8082		Prep: SW3541/3665A / 10-Jan-2019		Analyst: JJJ
Aroclor 1016	U		0.0056	0.022	mg/Kg-dry	1	11-Jan-2019 14:00
Aroclor 1221	U		0.0075	0.022	mg/Kg-dry	1	11-Jan-2019 14:00
Aroclor 1232	U		0.0061	0.022	mg/Kg-dry	1	11-Jan-2019 14:00
Aroclor 1242	U		0.0079	0.022	mg/Kg-dry	1	11-Jan-2019 14:00
Aroclor 1248	U		0.0079	0.022	mg/Kg-dry	1	11-Jan-2019 14:00
Aroclor 1254	U		0.0063	0.022	mg/Kg-dry	1	11-Jan-2019 14:00
Aroclor 1260	0.038		0.0054	0.022	mg/Kg-dry	1	11-Jan-2019 14:00
Surr: Decachlorobiphenyl	104			54-143	%REC	1	11-Jan-2019 14:00
Surr: Tetrachloro-m-xylene	94.4			50-140	%REC	1	11-Jan-2019 14:00
<b>METALS BY SW6020A</b>							
			Method: SW6020		Prep: SW3050A / 10-Jan-2019		Analyst: RPM
Arsenic	8.73		0.0862	0.616	mg/Kg-dry	1	11-Jan-2019 17:41
Cadmium	0.406	J	0.0332	0.616	mg/Kg-dry	1	11-Jan-2019 17:41
Cobalt	12.7		0.0185	0.616	mg/Kg-dry	1	11-Jan-2019 17:41
Iron	27,900		113	3080	mg/Kg-dry	50	11-Jan-2019 18:22
Lead	25.4		0.0160	0.616	mg/Kg-dry	1	11-Jan-2019 17:41
Manganese	1,660		2.65	30.8	mg/Kg-dry	50	11-Jan-2019 18:22
<b>MOISTURE - ASTM D2216</b>							
			Method: ASTM D2216				Analyst: DFF
Percent Moisture	25.8		0.0100	0.0100	wt%	1	11-Jan-2019 08:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RATX  
 Sample ID: DRA03-20190109-12-56  
 Collection Date: 09-Jan-2019 14:25

**ANALYTICAL REPORT**  
 WorkOrder: HS19010410  
 Lab ID: HS19010410-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 10-Jan-2019		Analyst: GEY	
Acenaphthene	U		0.00066	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Anthracene	U		0.00066	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Benzo(a)pyrene	0.0015	JQ	0.0013	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Benzo(b)fluoranthene	U		0.0016	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Benzo(g,h,i)perylene	0.0015	JQ	0.00092	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Benzo(k)fluoranthene	0.0017	J	0.0012	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Chrysene	0.0016	J	0.0011	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Fluoranthene	0.0023	JQ	0.0014	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Indeno(1,2,3-cd)pyrene	U		0.0011	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Naphthalene	U		0.00079	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Phenanthrene	U		0.0020	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Pyrene	0.0027	JQ	0.00079	0.0043	mg/Kg-dry	1	11-Jan-2019 15:12
Surr: 2-Fluorobiphenyl	69.8			43-125	%REC	1	11-Jan-2019 15:12
Surr: 4-Terphenyl-d14	69.9			32-125	%REC	1	11-Jan-2019 15:12
Surr: Nitrobenzene-d5	63.3			37-125	%REC	1	11-Jan-2019 15:12
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 10-Jan-2019		Analyst: JLJ	
Aroclor 1016	U		0.0056	0.022	mg/Kg-dry	1	11-Jan-2019 14:16
Aroclor 1221	U		0.0074	0.022	mg/Kg-dry	1	11-Jan-2019 14:16
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	11-Jan-2019 14:16
Aroclor 1242	U		0.0078	0.022	mg/Kg-dry	1	11-Jan-2019 14:16
Aroclor 1248	U		0.0078	0.022	mg/Kg-dry	1	11-Jan-2019 14:16
Aroclor 1254	U		0.0062	0.022	mg/Kg-dry	1	11-Jan-2019 14:16
Aroclor 1260	30	JK	0.53	2.2	mg/Kg-dry	100	11-Jan-2019 15:04
Surr: Decachlorobiphenyl	0	JS		54-143	%REC	100	11-Jan-2019 15:04
Surr: Decachlorobiphenyl	114			54-143	%REC	1	11-Jan-2019 14:16
Surr: Tetrachloro-m-xylene	97.4			50-140	%REC	1	11-Jan-2019 14:16
Surr: Tetrachloro-m-xylene	0	JS		50-140	%REC	100	11-Jan-2019 15:04
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 10-Jan-2019		Analyst: RPM	
Arsenic	8.85		0.0885	0.632	mg/Kg-dry	1	11-Jan-2019 17:43
Cadmium	0.390	JQ	0.0341	0.632	mg/Kg-dry	1	11-Jan-2019 17:43
Cobalt	12.9		0.0190	0.632	mg/Kg-dry	1	11-Jan-2019 17:43
Iron	26,200		116	3160	mg/Kg-dry	50	11-Jan-2019 18:24
Lead	24.3		0.0164	0.632	mg/Kg-dry	1	11-Jan-2019 17:43
Manganese	1,830		2.72	31.6	mg/Kg-dry	50	11-Jan-2019 18:24

Note: See Qualifiers Page for a list of qualifiers and their explanation.



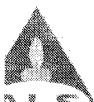
2/4/19

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: DRA03-20190109-12-56  
Collection Date: 09-Jan-2019 14:25

**ANALYTICAL REPORT**  
WorkOrder: HS19010410  
Lab ID: HS19010410-02  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216							
Method: ASTM D2216							
Percent Moisture	24.4		0.0100	0.0100	wt%	1	Analyst: DFF 11-Jan-2019 08:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/14/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA03-20190109-12-57  
 Collection Date: 09-Jan-2019 14:25

**ANALYTICAL REPORT**  
 WorkOrder: HS19010410  
 Lab ID: HS19010410-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		Prep: SW3541 / 10-Jan-2019		Analyst: GEY	
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Benzo(a)pyrene	0.0017	JS	0.0013	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Benzo(b)fluoranthene	0.0031	JS	0.0016	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Benzo(g,h,i)perylene	0.0020	JS	0.00091	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Benzo(k)fluoranthene	U		0.0012	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Chrysene	0.0021	JS	0.0010	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Fluoranthene	0.0029	JS	0.0014	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Indeno(1,2,3-cd)pyrene	0.0013	JS	0.0010	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Naphthalene	U		0.00078	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Phenanthrene	U		0.0020	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Pyrene	0.0031	JS	0.00078	0.0043	mg/Kg-dry	1	11-Jan-2019 15:32
Surr: 2-Fluorobiphenyl	71.9			43-125	%REC	1	11-Jan-2019 15:32
Surr: 4-Terphenyl-d14	74.8			32-125	%REC	1	11-Jan-2019 15:32
Surr: Nitrobenzene-d5	69.4			37-125	%REC	1	11-Jan-2019 15:32
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		Prep: SW3541/3655A / 10-Jan-2019		Analyst: JLJ	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	11-Jan-2019 14:32
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	11-Jan-2019 14:32
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	11-Jan-2019 14:32
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	11-Jan-2019 14:32
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	11-Jan-2019 14:32
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	11-Jan-2019 14:32
Aroclor 1260	8.6	JK	0.26	1.1	mg/Kg-dry	50	11-Jan-2019 15:19
Surr: Decachlorobiphenyl	0	JS		54-143	%REC	50	11-Jan-2019 15:19
Surr: Decachlorobiphenyl	105			54-143	%REC	1	11-Jan-2019 14:32
Surr: Tetrachloro-m-xylene	93.9			50-140	%REC	1	11-Jan-2019 14:32
Surr: Tetrachloro-m-xylene	0	JS		50-140	%REC	50	11-Jan-2019 15:19
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		Prep: SW3050A / 10-Jan-2019		Analyst: RPM	
Arsenic	8.39		0.0875	0.625	mg/Kg-dry	1	11-Jan-2019 18:18
Cadmium	0.407	JS	0.0338	0.625	mg/Kg-dry	1	11-Jan-2019 18:18
Cobalt	15.0		0.0188	0.625	mg/Kg-dry	1	11-Jan-2019 18:18
Iron	26,600		114	3130	mg/Kg-dry	50	11-Jan-2019 18:27
Lead	22.1		0.0163	0.625	mg/Kg-dry	1	11-Jan-2019 18:18
Manganese	2,150		2.69	31.3	mg/Kg-dry	50	11-Jan-2019 18:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: DRA03-20190109-12-57  
Collection Date: 09-Jan-2019 14:25

**ANALYTICAL REPORT**

WorkOrder: HS19010410  
Lab ID: HS19010410-03  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	23.4		0.0100	0.0100	wt%	1	11-Jan-2019 08:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010458

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010458; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD05-01-20190110-06-56</u>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 5, 2019



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD05-01-20190110-06-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD05-01-20190110-06-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

The only sample was ND for all target compounds.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010458

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010458; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD05-01-20190110-06-56</u>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

No sample from this analytical package underwent MS/MSD analysis. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010458

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010458; Frank J. Doyle Salvage Removal Action. One sample was analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD05-01-20190110-06-56</u>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____
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_____	_____	_____
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_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 5, 2019



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution for the solid matrix for ICP metals. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Manganese in the only sample was analyzed at a 100-fold dilution. The reporting limit for manganese in this sample was elevated as a result of the dilution performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD05-01-20190110-06-56  
 Collection Date: 10-Jan-2019 12:03

**ANALYTICAL REPORT**  
 WorkOrder: HS19010458  
 Lab ID: HS19010458-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
			Method: SW8270		Prep: SW3541 / 11-Jan-2019		Analyst: ACN
Acenaphthene	U		0.00063	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Acenaphthylene	0.0027	JJP	0.0013	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Anthracene	0.0023	JJP	0.00063	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Benz(a)anthracene	0.011		0.0020	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Benzo(a)pyrene	0.013		0.0013	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Benzo(b)fluoranthene	0.024		0.0015	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Benzo(g,h,i)perylene	0.013		0.00088	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Benzo(k)fluoranthene	0.011		0.0011	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Chrysene	0.015		0.0010	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Dibenz(a,h)anthracene	0.0041	JJP	0.0020	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Fluoranthene	0.015		0.0014	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Indeno(1,2,3-cd)pyrene	0.016		0.0010	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Phenanthrene	0.0083		0.0019	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Pyrene	0.018		0.00075	0.0041	mg/Kg-dry	1	12-Jan-2019 00:12
Surr: 2-Fluorobiphenyl	46.7			43-125	%REC	1	12-Jan-2019 00:12
Surr: 4-Terphenyl-d14	76.3			32-125	%REC	1	12-Jan-2019 00:12
Surr: Nitrobenzene-d5	41.0			37-125	%REC	1	12-Jan-2019 00:12
<b>PCBS BY SW8082A</b>							
			Method: SW8082		Prep: SW3541/3665A / 11-Jan-2019		Analyst: JLJ
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	11-Jan-2019 19:18
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	11-Jan-2019 19:18
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	11-Jan-2019 19:18
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	11-Jan-2019 19:18
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	11-Jan-2019 19:18
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	11-Jan-2019 19:18
Aroclor 1260	U		0.0050	0.021	mg/Kg-dry	1	11-Jan-2019 19:18
Surr: Decachlorobiphenyl	81.4			54-143	%REC	1	11-Jan-2019 19:18
Surr: Tetrachloro-m-xylene	72.8			50-140	%REC	1	11-Jan-2019 19:18
<b>METALS BY SW6020A</b>							
			Method: SW6020		Prep: SW3050A / 11-Jan-2019		Analyst: JCJ
Arsenic	65.8		0.0813	0.581	mg/Kg-dry	1	14-Jan-2019 13:32
Cadmium	0.369	JJP	0.0314	0.581	mg/Kg-dry	1	14-Jan-2019 13:32
Cobalt	6.49		0.0174	0.581	mg/Kg-dry	1	14-Jan-2019 13:32
Iron	11,200		2.13	58.1	mg/Kg-dry	1	14-Jan-2019 13:32
Lead	27.8		0.0151	0.581	mg/Kg-dry	1	14-Jan-2019 13:32
Manganese	1,110		4.99	58.1	mg/Kg-dry	100	14-Jan-2019 14:11
<b>MOISTURE - ASTM D2216</b>							
			Method: ASTM D2216				Analyst: DFF
Percent Moisture	20.9		0.0100	0.0100	wt%	1	11-Jan-2019 09:31

Note: See Qualifiers Page for a list of qualifiers and their explanation.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010607

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010607; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA022-20190114-12-56</u>	<u>EAS08-20190114-46-56</u>	<u>FJD04-08-20190114-46-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided or were diluted out. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD04-08-20190114-46-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided for analytes whose sample concentration did not exceed the spike concentration by a factor of four times or more. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD04-08-20190114-46-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Some PCB samples were analyzed at a dilution for some compounds. Reporting limits for these compounds in these samples were elevated as a result of the dilutions performed.

11. Laboratory Contact:

The laboratory was contacted on February 5, 2019 regarding an incomplete "Prep Batch Report". An acceptable response was received on February 7, 2019.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.



## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010607

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010607; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA022-20190114-12-56</u>	<u>EAS08-20190114-46-56</u>	<u>FJD04-08-20190114-46-56</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA022-20190114-12-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample DRA022-20190114-12-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the following internal standards were outside of the control limit of a factor of 2 (-50% to +100%) or retention times were not within 30 seconds from the associated 12 hour calibration standard:

SAMPLE ID	INTERNAL STANDARD	% AREA OF 12 HR STD	QUALIFIER FLAG
FJD04-20190114-46-56	Naphthalene-d8	39	UJK, naphthalene

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

The laboratory was contacted on February 5, 2019 regarding an incorrect statement in the case narrative and which samples are associated with the internal standard which failed criteria. An acceptable response was received on February 7, 2019.

15. Overall Assessment

The naphthalene result in one sample was estimated due to low internal standard area recovery.

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010607

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010607; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA022-20190114-12-56</u>	<u>EAS08-20190114-46-56</u>	<u>FJD04-08-20190114-46-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.



9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution for the solid matrix for ICP metals. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Some ICP metals analytes in some samples were analyzed at a 100 or 200-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA022-20190114-12-56  
 Collection Date: 14-Jan-2019 11:47

**ANALYTICAL REPORT**  
 WorkOrder: HS19010607  
 Lab ID: HS19010607-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 15-Jan-2019		Analyst: ACN
Acenaphthene	U		0.00066	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Anthracene	U		0.00066	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Benz(a)anthracene	0.0032	JF	0.0021	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Benzo(a)pyrene	0.0043	JF	0.0013	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Benzo(b)fluoranthene	0.0051		0.0016	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Benzo(g,h,i)perylene	0.0032	JF	0.00092	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Benzo(k)fluoranthene	0.0027	JF	0.0012	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Chrysene	0.0041	JF	0.0011	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Fluoranthene	0.0044		0.0014	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Indeno(1,2,3-cd)pyrene	0.0032	JF	0.0011	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Naphthalene	U		0.00079	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Phenanthrene	0.0021	JF	0.0020	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Pyrene	0.0039	JF	0.00079	0.0043	mg/Kg-dry	1	16-Jan-2019 11:36
Surr: 2-Fluorobiphenyl	82.6			43-125	%REC	1	16-Jan-2019 11:36
Surr: 4-Terphenyl-d14	99.6			32-125	%REC	1	16-Jan-2019 11:36
Surr: Nitrobenzene-d5	76.8			37-125	%REC	1	16-Jan-2019 11:36
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 15-Jan-2019		Analyst: JLJ
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	16-Jan-2019 09:50
Aroclor 1221	U		0.0074	0.022	mg/Kg-dry	1	16-Jan-2019 09:50
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	16-Jan-2019 09:50
Aroclor 1242	U		0.0078	0.022	mg/Kg-dry	1	16-Jan-2019 09:50
Aroclor 1248	U		0.0078	0.022	mg/Kg-dry	1	16-Jan-2019 09:50
Aroclor 1254	U		0.0062	0.022	mg/Kg-dry	1	16-Jan-2019 09:50
Aroclor 1260	0.033		0.0053	0.022	mg/Kg-dry	1	16-Jan-2019 09:50
Surr: Decachlorobiphenyl	92.8			54-143	%REC	1	16-Jan-2019 09:50
Surr: Tetrachloro-m-xylene	87.9			50-140	%REC	1	16-Jan-2019 09:50
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 14-Jan-2019		Analyst: JCJ
Arsenic	4.91		0.0855	0.611	mg/Kg-dry	1	15-Jan-2019 20:21
Cadmium	0.859		0.0330	0.611	mg/Kg-dry	1	15-Jan-2019 20:21
Cobalt	6.85		0.0183	0.611	mg/Kg-dry	1	15-Jan-2019 20:21
Iron	11,000		2.23	61.1	mg/Kg-dry	1	15-Jan-2019 20:21
Lead	55.7		0.0159	0.611	mg/Kg-dry	1	15-Jan-2019 20:21
Manganese	1,220		5.25	61.1	mg/Kg-dry	100	16-Jan-2019 12:04
<b>MOISTURE - ASTM D2216</b>			Method: ASTM D2216				Analyst: DFF
Percent Moisture	24.2		0.0100	0.0100	wt%	1	15-Jan-2019 11:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS08-20190114-46-56  
 Collection Date: 14-Jan-2019 11:55

**ANALYTICAL REPORT**  
 WorkOrder: HS19010607  
 Lab ID: HS19010607-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		Prep: SW3541 / 15-Jan-2019		Analyst: ACN	
Acenaphthene	U		0.00063	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Anthracene	U		0.00063	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Benz(a)anthracene	0.014		0.0020	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Benzo(a)pyrene	0.037		0.0013	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Benzo(b)fluoranthene	0.067		0.0015	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Benzo(g,h,i)perylene	0.033		0.00088	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Benzo(k)fluoranthene	0.027		0.0011	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Chrysene	0.028		0.0010	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Dibenz(a,h)anthracene	0.0092		0.0020	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Fluoranthene	0.018		0.0014	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Indeno(1,2,3-cd)pyrene	0.040		0.0010	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Naphthalene	U		0.00076	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Phenanthrene	U		0.0019	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Pyrene	0.018		0.00076	0.0042	mg/Kg-dry	1	16-Jan-2019 13:14
Surr: 2-Fluorobiphenyl	53.8			43-125	%REC	1	16-Jan-2019 13:14
Surr: 4-Terphenyl-d14	72.1			32-125	%REC	1	16-Jan-2019 13:14
Surr: Nitrobenzene-d5	50.4			37-125	%REC	1	16-Jan-2019 13:14
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		Prep: SW3541/3665A / 15-Jan-2019		Analyst: JJJ	
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	16-Jan-2019 10:06
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	16-Jan-2019 10:06
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	16-Jan-2019 10:06
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	16-Jan-2019 10:06
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	16-Jan-2019 10:06
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	16-Jan-2019 10:06
Aroclor 1260	25		0.50	2.1	mg/Kg-dry	100	16-Jan-2019 10:38
Surr: Decachlorobiphenyl	0	JS		54-143	%REC	100	16-Jan-2019 10:38
Surr: Decachlorobiphenyl	130			54-143	%REC	1	16-Jan-2019 10:06
Surr: Tetrachloro-m-xylene	79.8			50-140	%REC	1	16-Jan-2019 10:06
Surr: Tetrachloro-m-xylene	0	JS		50-140	%REC	100	16-Jan-2019 10:38
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		Prep: SW3050A / 14-Jan-2019		Analyst: JCJ	
Arsenic	8.72		0.0827	0.591	mg/Kg-dry	1	15-Jan-2019 20:24
Cadmium	0.530	JP	0.0319	0.591	mg/Kg-dry	1	15-Jan-2019 20:24
Cobalt	17.6		0.0177	0.591	mg/Kg-dry	1	15-Jan-2019 20:24
Iron	31,900		216	5910	mg/Kg-dry	100	16-Jan-2019 12:07
Lead	28.9		0.0154	0.591	mg/Kg-dry	1	15-Jan-2019 20:24
Manganese	2,330		10.2	118	mg/Kg-dry	200	16-Jan-2019 12:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: EAS08-20190114-46-56  
Collection Date: 14-Jan-2019 11:55

**ANALYTICAL REPORT**  
WorkOrder: HS19010607  
Lab ID: HS19010607-02  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216							Analyst: DFF
Method: ASTM D2216							
Percent Moisture	20.8		0.0100	0.0100	wt%	1	15-Jan-2019 11:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-08-20190114-46-56  
 Collection Date: 14-Jan-2019 12:03

**ANALYTICAL REPORT**  
 WorkOrder: HS19010607  
 Lab ID: HS19010607-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
			Method: SW8270		Prep: SW3541 / 15-Jan-2019		Analyst: ACN
Acenaphthene	U		0.00063	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Anthracene	U		0.00063	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Benz(a)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Benzo(a)pyrene	0.0014	JS	0.0013	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Benzo(b)fluoranthene	0.0026	JS	0.0015	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Benzo(g,h,i)perylene	0.0031	JS	0.00088	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Benzo(k)fluoranthene	0.0021	JS	0.0011	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Chrysene	U		0.0010	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Fluoranthene	U		0.0014	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Indeno(1,2,3-cd)pyrene	0.0021	JS	0.0010	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Naphthalene	U	JS	0.00076	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Phenanthrene	U		0.0019	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Pyrene	U		0.00076	0.0042	mg/Kg-dry	1	16-Jan-2019 13:33
Surr: 2-Fluorobiphenyl	48.4			43-125	%REC	1	16-Jan-2019 13:33
Surr: 4-Terphenyl-d14	55.3			32-125	%REC	1	16-Jan-2019 13:33
Surr: Nitrobenzene-d5	47.7			37-125	%REC	1	16-Jan-2019 13:33
<b>PCBS BY SW8082A</b>							
			Method: SW8082		Prep: SW3541/3685A / 15-Jan-2019		Analyst: JJJ
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	16-Jan-2019 09:03
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	16-Jan-2019 09:03
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	16-Jan-2019 09:03
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	16-Jan-2019 09:03
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	16-Jan-2019 09:03
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	16-Jan-2019 09:03
Aroclor 1260	7.7		0.13	0.53	mg/Kg-dry	25	16-Jan-2019 10:22
Surr: Decachlorobiphenyl	0	JS		54-143	%REC	25	16-Jan-2019 10:22
Surr: Decachlorobiphenyl	104			54-143	%REC	1	16-Jan-2019 09:03
Surr: Tetrachloro-m-xylene	71.0			50-140	%REC	1	16-Jan-2019 09:03
Surr: Tetrachloro-m-xylene	0	JS		50-140	%REC	25	16-Jan-2019 10:22
<b>METALS BY SW6020A</b>							
			Method: SW6020		Prep: SW3050A / 14-Jan-2019		Analyst: JCJ
Arsenic	6.17		0.0859	0.614	mg/Kg-dry	1	15-Jan-2019 20:26
Cadmium	0.303	JS	0.0331	0.614	mg/Kg-dry	1	15-Jan-2019 20:26
Cobalt	9.99		0.0184	0.614	mg/Kg-dry	1	15-Jan-2019 20:26
Iron	15,600		2.25	61.4	mg/Kg-dry	1	15-Jan-2019 20:26
Lead	17.1		0.0160	0.614	mg/Kg-dry	1	15-Jan-2019 20:26
Manganese	1,480		5.28	61.4	mg/Kg-dry	100	16-Jan-2019 12:11

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD04-08-20190114-46-56  
Collection Date: 14-Jan-2019 12:03

**ANALYTICAL REPORT**  
WorkOrder: HS19010607  
Lab ID: HS19010607-03  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: DFF
Percent Moisture	20.9		0.0100	0.0100	wt%	1	15-Jan-2019 11:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER      20600.012.001.1175.01      TDD NUMBER      0001/18-175

PROJECT NUMBER	SDG NUMBER	HS19010685
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010685; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

[illegible]

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 5, 2019

DATE February 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided or were diluted out. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample EAS07-20190115-36-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided for analytes whose sample concentration did not exceed the spike concentration by a factor of four times or more. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample EAS07-20190115-36-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Some PCB samples were analyzed at a dilution for some compounds. Reporting limits for these compounds in these samples were elevated as a result of the dilutions performed.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER      20600.012.001.1175.01      TDD NUMBER      0001/18-175

PROJECT NUMBER	SDG NUMBER	HS19010685
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010685; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

[illegible]

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 5, 2019

DATE February 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA03-20190115-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample DRA03-20190115-24-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010685

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010685; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA03-20190115-24-56</u>	<u>EAS07-20190115-36-56</u>	

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 5, 2019



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution for the solid matrix for ICP metals. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Some ICP metals analytes in some samples were analyzed at a 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

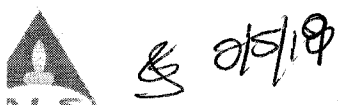
The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA03-20190115-24-56  
 Collection Date: 15-Jan-2019 13:25

**ANALYTICAL REPORT**  
 WorkOrder: HS19010685  
 Lab ID: HS19010685-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 16-Jan-2019</b>		<b>Analyst: GEY</b>	
Acenaphthene	U		0.00069	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Acenaphthylene	U		0.0014	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Anthracene	U		0.00069	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Benz(a)anthracene	U		0.0022	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Benzo(a)pyrene	U		0.0014	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Benzo(b)fluoranthene	0.0072		0.0017	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Benzo(g,h,i)perylene	U		0.00097	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Benzo(k)fluoranthene	U		0.0012	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Chrysene	U		0.0011	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Dibenz(a,h)anthracene	U		0.0022	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Fluoranthene	U		0.0015	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Fluorene	U		0.0015	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Indeno(1,2,3-cd)pyrene	U		0.0011	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Naphthalene	U		0.00083	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Phenanthrene	U		0.0021	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Pyrene	U		0.00083	0.0046	mg/Kg-dry	1	16-Jan-2019 21:20
Surr: 2-Fluorobiphenyl	77.5			43-125	%REC	1	16-Jan-2019 21:20
Surr: 4-Terphenyl-d14	87.4			32-125	%REC	1	16-Jan-2019 21:20
Surr: Nitrobenzene-d5	79.7			37-125	%REC	1	16-Jan-2019 21:20
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 16-Jan-2019</b>		<b>Analyst: JLJ</b>	
Aroclor 1016	U		0.0058	0.023	mg/Kg-dry	1	17-Jan-2019 11:01
Aroclor 1221	U		0.0077	0.023	mg/Kg-dry	1	17-Jan-2019 11:01
Aroclor 1232	U		0.0062	0.023	mg/Kg-dry	1	17-Jan-2019 11:01
Aroclor 1242	U		0.0082	0.023	mg/Kg-dry	1	17-Jan-2019 11:01
Aroclor 1248	U		0.0082	0.023	mg/Kg-dry	1	17-Jan-2019 11:01
Aroclor 1254	U		0.0065	0.023	mg/Kg-dry	1	17-Jan-2019 11:01
Aroclor 1260	4.3		0.11	0.46	mg/Kg-dry	20	17-Jan-2019 11:33
Surr: Decachlorobiphenyl	87.6			54-143	%REC	1	17-Jan-2019 11:01
Surr: Decachlorobiphenyl	102	J		54-143	%REC	20	17-Jan-2019 11:33
Surr: Tetrachloro-m-xylene	82.2			50-140	%REC	1	17-Jan-2019 11:01
Surr: Tetrachloro-m-xylene	81.7	J		50-140	%REC	20	17-Jan-2019 11:33
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		<b>Prep: SW3050A / 16-Jan-2019</b>		<b>Analyst: JCJ</b>	
Arsenic	5.37		0.0934	0.667	mg/Kg-dry	1	16-Jan-2019 23:43
Cadmium	0.367	LT	0.0360	0.667	mg/Kg-dry	1	16-Jan-2019 23:43
Cobalt	9.96		0.0200	0.667	mg/Kg-dry	1	16-Jan-2019 23:43
Iron	17,300		2.44	66.7	mg/Kg-dry	1	16-Jan-2019 23:43
Lead	12.9		0.0173	0.667	mg/Kg-dry	1	16-Jan-2019 23:43
Manganese	1,410		5.74	66.7	mg/Kg-dry	100	17-Jan-2019 12:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: DRA03-20190115-24-56  
Collection Date: 15-Jan-2019 13:25

**ANALYTICAL REPORT**

WorkOrder: HS19010685  
Lab ID: HS19010685-01  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: DFF
Percent Moisture	27.9		0.0100	0.0100	wt%	1	16-Jan-2019 10:49

Note: See Qualifiers Page for a list of qualifiers and their explanation.



2/15/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS07-20190115-36-56  
 Collection Date: 15-Jan-2019 13:35

**ANALYTICAL REPORT**  
 WorkOrder: HS19010685  
 Lab ID: HS19010685-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 16-Jan-2019</b>		<b>Analyst: GEY</b>	
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Benz(a)anthracene	0.0044		0.0020	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Benzo(a)pyrene	0.0039	JJP	0.0012	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Benzo(b)fluoranthene	0.0057		0.0015	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Benzo(g,h,i)perylene	0.0029	JJP	0.00087	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Benzo(k)fluoranthene	0.0022	JJP	0.0011	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Chrysene	0.0054		0.00099	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Fluoranthene	0.0034	JJP	0.0014	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Indeno(1,2,3-cd)pyrene	0.0025	JJP	0.00099	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Naphthalene	U		0.00074	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Phenanthrene	0.0030	JJP	0.0019	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Pyrene	0.0051		0.00074	0.0041	mg/Kg-dry	1	16-Jan-2019 22:20
Surr: 2-Fluorobiphenyl	76.3			43-125	%REC	1	16-Jan-2019 22:20
Surr: 4-Terphenyl-d14	83.0			32-125	%REC	1	16-Jan-2019 22:20
Surr: Nitrobenzene-d5	73.6			37-125	%REC	1	16-Jan-2019 22:20
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 16-Jan-2019</b>		<b>Analyst: JLJ</b>	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	17-Jan-2019 11:17
Aroclor 1221	U		0.0069	0.021	mg/Kg-dry	1	17-Jan-2019 11:17
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	17-Jan-2019 11:17
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	17-Jan-2019 11:17
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	17-Jan-2019 11:17
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	17-Jan-2019 11:17
Aroclor 1260	4.8		0.099	0.41	mg/Kg-dry	20	17-Jan-2019 11:49
Surr: Decachlorobiphenyl	103			54-143	%REC	1	17-Jan-2019 11:17
Surr: Decachlorobiphenyl	99.3	J		54-143	%REC	20	17-Jan-2019 11:49
Surr: Tetrachloro-m-xylene	89.7			50-140	%REC	1	17-Jan-2019 11:17
Surr: Tetrachloro-m-xylene	79.8	J		50-140	%REC	20	17-Jan-2019 11:49
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		<b>Prep: SW3050A / 16-Jan-2019</b>		<b>Analyst: JCJ</b>	
Arsenic	5.09		0.0817	0.583	mg/Kg-dry	1	16-Jan-2019 23:45
Cadmium	0.277	JJP	0.0315	0.583	mg/Kg-dry	1	16-Jan-2019 23:45
Cobalt	9.33		0.0175	0.583	mg/Kg-dry	1	16-Jan-2019 23:45
Iron	18,400		2.13	58.3	mg/Kg-dry	1	16-Jan-2019 23:45
Lead	17.7		0.0152	0.583	mg/Kg-dry	1	16-Jan-2019 23:45
Manganese	1,140		5.02	58.3	mg/Kg-dry	100	17-Jan-2019 12:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/25/19

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: EAS07-20190115-36-56  
Collection Date: 15-Jan-2019 13:35

**ANALYTICAL REPORT**

WorkOrder: HS19010685  
Lab ID: HS19010685-02  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216	Method: ASTM D2216						Analyst: DFF
Percent Moisture	19.2		0.0100	0.0100	wt%	1	16-Jan-2019 10:49

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Handwritten signature/initials: *JS/PA*

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010829

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010829; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) or Synthetic Precipitation Leaching Procedure (SPLP) PCBs by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA09-20190117-24-56</u>	<u>EAS07-20190115-36-56</u>	<u>FJD04-08-20190114-46-56</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**. Samples were extracted for SPLP PCBs using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. All SPLP samples were extracted within the required holding time of less than 14 days for PCBs. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided or were diluted out. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample DRA09-20190117-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. Sample FJD04-08-20190114-46-56 underwent MS analysis for the SPLP matrix. Recoveries of all spiked analytes were within the control limits provided with the following exception:

ANALYTE	COMPOUND	%R	AFFECTED SAMPLES	QUALIFIER FLAG
Aroclor 1260	Solid	133	FJD04-08-20190114-46-56	JH, Aroclor 1260

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA09-20190117-24-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD):

The laboratory analyzed an LCS and/or LCSD and recoveries and relative percent difference (RPD) values were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The Aroclor 1260 result in one sample was estimated due to high MS recovery.

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010829

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010829; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA09-20190117-24-56</u>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.



## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010829

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010829; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) or Synthetic Precipitation Leaching Procedure (SPLP) metals (Mn and/or Ag) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA09-20190117-24-56</u>	<u>EAS07-20190115-36-56</u>	<u>FJD04-08-20190114-46-56</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**. Samples were extracted for SPLP metals using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data. All SPLP samples were extracted within the required holding time of less than 180 days for metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample EAS07-20190115-36-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for Mn & Ag for the SPLP matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample EAS07-20190115-36-56 underwent MS/MSD analysis for Mn & Ag for the SPLP matrix. The spike recoveries for the all analytes were within the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more. The post digestion spike recoveries were acceptable. No qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample EAS07-20190115-36-56 underwent serial dilution for Mn & Ag for the SPLP matrix. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Manganese (total) in the only sample was analyzed at a 50-fold dilution. The reporting limit for manganese in this sample was elevated as a result of the dilution performed.

## 13. Laboratory Contact

No laboratory contact was required.

## 14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA09-20190117-24-56  
 Collection Date: 17-Jan-2019 14:58

**ANALYTICAL REPORT**

WorkOrder: HS19010829  
 Lab ID: HS19010829-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>			Method: SW8270		Prep: SW3541 / 18-Jan-2019		Analyst: GEY
Acenaphthene	U		0.00065	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Anthracene	U		0.00065	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Benzo(a)pyrene	0.0019	JQ	0.0013	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Benzo(b)fluoranthene	0.0022	JQ	0.0016	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Benzo(g,h,i)perylene	0.0034	JQ	0.00091	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Benzo(k)fluoranthene	0.0020	JQ	0.0012	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Chrysene	0.0041	JQ	0.0010	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Fluoranthene	0.0020	JQ	0.0014	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Naphthalene	0.0021	JQ	0.00078	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Phenanthrene	U		0.0019	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Pyrene	0.0021	JQ	0.00078	0.0043	mg/Kg-dry	1	18-Jan-2019 19:42
Surr: 2-Fluorobiphenyl	68.8			43-125	%REC	1	18-Jan-2019 19:42
Surr: 4-Terphenyl-d14	79.0			32-125	%REC	1	18-Jan-2019 19:42
Surr: Nitrobenzene-d5	67.8			37-125	%REC	1	18-Jan-2019 19:42
<b>PCBS BY SW8082A</b>			Method: SW8082		Prep: SW3541/3665A / 18-Jan-2019		Analyst: JJJ
Aroclor 1016	U		0.0054	0.022	mg/Kg-dry	1	21-Jan-2019 13:49
Aroclor 1221	U		0.0072	0.022	mg/Kg-dry	1	21-Jan-2019 13:49
Aroclor 1232	U		0.0058	0.022	mg/Kg-dry	1	21-Jan-2019 13:49
Aroclor 1242	U		0.0076	0.022	mg/Kg-dry	1	21-Jan-2019 13:49
Aroclor 1248	U		0.0076	0.022	mg/Kg-dry	1	21-Jan-2019 13:49
Aroclor 1254	U		0.0061	0.022	mg/Kg-dry	1	21-Jan-2019 13:49
Aroclor 1260	0.045		0.0052	0.022	mg/Kg-dry	1	21-Jan-2019 13:49
Surr: Decachlorobiphenyl	101			54-143	%REC	1	21-Jan-2019 13:49
Surr: Tetrachloro-m-xylene	99.5			50-140	%REC	1	21-Jan-2019 13:49
<b>METALS BY SW6020A</b>			Method: SW6020		Prep: SW3050A / 18-Jan-2019		Analyst: JCJ
Arsenic	5.94		0.0878	0.627	mg/Kg-dry	1	18-Jan-2019 20:53
Cadmium	0.346	JQ	0.0339	0.627	mg/Kg-dry	1	18-Jan-2019 20:53
Cobalt	11.7		0.0188	0.627	mg/Kg-dry	1	18-Jan-2019 20:53
Iron	21,600		2.30	62.7	mg/Kg-dry	1	18-Jan-2019 20:53
Lead	19.0		0.0163	0.627	mg/Kg-dry	1	18-Jan-2019 20:53
Manganese	835		2.70	31.4	mg/Kg-dry	50	21-Jan-2019 15:14
<b>MOISTURE - ASTM D2216</b>			Method: ASTM D2216				Analyst: DFF
Percent Moisture	22.8		0.0100	0.0100	wt%	1	18-Jan-2019 11:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: EAS07-20190115-36-56  
 Collection Date: 15-Jan-2019 13:35

**ANALYTICAL REPORT**

WorkOrder: HS19010829  
 Lab ID: HS19010829-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>SPLP PCBS BY SW8082A</b>							
	<b>Method: SW1312/8082</b>		Leache: SW1312 / 19-Jan-2019		Prep: SW3510C/3665A / 21-Jan-2019		Analyst: JLJ
Aroclor 1016	U		0.11	0.54	ug/L	1	21-Jan-2019 20:57
Aroclor 1221	U		0.11	0.54	ug/L	1	21-Jan-2019 20:57
Aroclor 1232	U		0.11	0.54	ug/L	1	21-Jan-2019 20:57
Aroclor 1242	U		0.11	0.54	ug/L	1	21-Jan-2019 20:57
Aroclor 1248	U		0.11	0.54	ug/L	1	21-Jan-2019 20:57
Aroclor 1254	U		0.11	0.54	ug/L	1	21-Jan-2019 20:57
<b>Aroclor 1260</b>	<b>0.55</b>		<b>0.11</b>	<b>0.54</b>	<b>ug/L</b>	<b>1</b>	<b>21-Jan-2019 20:57</b>
Surr: Decachlorobiphenyl	128			30-150	%REC	1	21-Jan-2019 20:57
Surr: Tetrachloro-m-xylene	115			30-150	%REC	1	21-Jan-2019 20:57
<b>SPLP METALS BY SW6020A</b>							
	<b>Method: SW6020</b>		Leache: SW1312 / 19-Jan-2019		Prep: SW3010A / 21-Jan-2019		Analyst: JCJ
<b>Manganese</b>	<b>0.0750</b>		<b>0.000700</b>	<b>0.00500</b>	<b>mg/L</b>	<b>1</b>	<b>21-Jan-2019 15:44</b>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

*g 01/01/19*



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-08-20190114-46-56  
 Collection Date: 14-Jan-2019 12:03

**ANALYTICAL REPORT**  
 WorkOrder: HS19010829  
 Lab ID: HS19010829-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>SPLP PCBS BY SW8082A</b>							
	Method: SW1312/8082		Leache: SW1312 / 19-Jan-2019		Prep: SW3510C/3665A / 21-Jan-2019		Analyst: JLJ
Aroclor 1016	U		0.11	0.53	ug/L	1	21-Jan-2019 19:06
Aroclor 1221	U		0.11	0.53	ug/L	1	21-Jan-2019 19:06
Aroclor 1232	U		0.11	0.53	ug/L	1	21-Jan-2019 19:06
Aroclor 1242	U		0.11	0.53	ug/L	1	21-Jan-2019 19:06
Aroclor 1248	U		0.11	0.53	ug/L	1	21-Jan-2019 19:06
Aroclor 1254	U		0.11	0.53	ug/L	1	21-Jan-2019 19:06
Aroclor 1260	0.28	# JQH	0.11	0.53	ug/L	1	21-Jan-2019 19:06
Surr: Decachlorobiphenyl	128			30-150	%REC	1	21-Jan-2019 19:06
Surr: Tetrachloro-m-xylene	117			30-150	%REC	1	21-Jan-2019 19:06
<b>SPLP METALS BY SW6020A</b>							
	Method: SW6020		Leache: SW1312 / 19-Jan-2019		Prep: SW3010A / 21-Jan-2019		Analyst: JCJ
Manganese	0.0752		0.000700	0.00500	mg/L	1	21-Jan-2019 15:55
Silver	U		0.000200	0.00500	mg/L	1	21-Jan-2019 15:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8 2/10/19

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010917

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010917; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD05-01-20190118-24-56</u>	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD05-01-20190118-24-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided for analytes whose sample concentration did not exceed the spike concentration by a factor of four times or more. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD05-01-20190118-24-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

The only sample was ND for all target compounds.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010917

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010917; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD05-01-20190118-24-56</u>	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD05-01-20190118-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD05-01-20190118-24-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

## 15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.



## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19010917

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19010917; Frank J. Doyle Salvage Removal Action. One sample was analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD05-01-20190118-24-56</u>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 8, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample FJD05-01-20190118-24-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for Mn for the SPLP matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample FJD05-01-20190118-24-56 underwent MS/MSD analysis for Mn for the SPLP matrix. The spike recoveries for the all analytes were within the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more. The post digestion spike recoveries were acceptable. No qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample FJD05-01-20190118-24-56 underwent serial dilution for Mn for the SPLP matrix. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Manganese in the only sample was analyzed at a 50-fold dilution. The reporting limit for manganese in this sample was elevated as a result of the dilution performed.

## 13. Laboratory Contact

No laboratory contact was required.

## 14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD05-01-20190118-24-56  
 Collection Date: 18-Jan-2019 12:12

**ANALYTICAL REPORT**  
 WorkOrder: HS19010917  
 Lab ID: HS19010917-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 21-Jan-2019		Analyst: GEY
Acenaphthene	U		0.00061	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Acenaphthylene	U		0.0012	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Anthracene	U		0.00061	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Benz(a)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Benzo(a)pyrene	U		0.0012	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Benzo(b)fluoranthene	U		0.0015	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Benzo(g,h,i)perylene	U		0.00085	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Benzo(k)fluoranthene	U		0.0011	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Chrysene	U		0.00097	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Dibenz(a,h)anthracene	U		0.0019	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Fluoranthene	U		0.0013	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Fluorene	U		0.0013	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Indeno(1,2,3-cd)pyrene	U		0.00097	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Naphthalene	0.0021	✓ JQ	0.00073	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Phenanthrene	U		0.0018	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Pyrene	U		0.00073	0.0040	mg/Kg-dry	1	21-Jan-2019 17:53
Surr: 2-Fluorobiphenyl	65.3			43-125	%REC	1	21-Jan-2019 17:53
Surr: 4-Terphenyl-d14	68.3			32-125	%REC	1	21-Jan-2019 17:53
Surr: Nitrobenzene-d5	69.4			37-125	%REC	1	21-Jan-2019 17:53
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 21-Jan-2019		Analyst: JLJ
Aroclor 1016	U		0.0051	0.020	mg/Kg-dry	1	22-Jan-2019 05:10
Aroclor 1221	U		0.0068	0.020	mg/Kg-dry	1	22-Jan-2019 05:10
Aroclor 1232	U		0.0055	0.020	mg/Kg-dry	1	22-Jan-2019 05:10
Aroclor 1242	U		0.0072	0.020	mg/Kg-dry	1	22-Jan-2019 05:10
Aroclor 1248	U		0.0072	0.020	mg/Kg-dry	1	22-Jan-2019 05:10
Aroclor 1254	U		0.0057	0.020	mg/Kg-dry	1	22-Jan-2019 05:10
Aroclor 1260	U		0.0049	0.020	mg/Kg-dry	1	22-Jan-2019 05:10
Surr: Decachlorobiphenyl	106			54-143	%REC	1	22-Jan-2019 05:10
Surr: Tetrachloro-m-xylene	105			50-140	%REC	1	22-Jan-2019 05:10
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 21-Jan-2019		Analyst: JCJ
Arsenic	15.6		0.0796	0.568	mg/Kg-dry	1	22-Jan-2019 17:09
Cadmium	0.310	✓ JQ	0.0307	0.568	mg/Kg-dry	1	22-Jan-2019 17:09
Cobalt	5.26		0.0171	0.568	mg/Kg-dry	1	22-Jan-2019 17:09
Iron	11,400		2.08	56.8	mg/Kg-dry	1	22-Jan-2019 17:09
Lead	7.19		0.0148	0.568	mg/Kg-dry	1	22-Jan-2019 17:09
Manganese	986		2.44	28.4	mg/Kg-dry	50	22-Jan-2019 17:46
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	17.9		0.0100	0.0100	wt%	1	21-Jan-2019 10:20

Note: See Qualifiers Page for a list of qualifiers and their explanation.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER      20600.012.001.1175.01      TDD NUMBER      0001/18-175

PROJECT NUMBER	SDG NUMBER	HS19011054
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19011054; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

[illegible]

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski

DATE February 12, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data. Sample FJD04-05-20190122-36-56 was re-extracted and re-analyzed for Aroclor 1242 due to laboratory contamination in the original extract. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample FJD04-06-20190122-36-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided for analytes whose sample concentration did not exceed the spike concentration by a factor of four times or more. No qualifications are placed on the data.



8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD04-06-20190122-36-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

One PCB sample was analyzed at a dilution for Aroclor 1260. The reporting limit for Aroclor 1260 in this sample was elevated as a result of the dilution performed.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER      20600.012.001.1175.01      TDD NUMBER      0001/18-175

PROJECT NUMBER	SDG NUMBER	HS19011054
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19011054; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

[illegible]

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 12, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD04-05-20190122-36-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD04-05-20190122-36-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate with the following exceptions:

ANALYTE	MATRIX	%R/%R	QC LIMITS	AFFECTED SAMPLES	QUALIFIER FLAG
Acenaphthene	Solid	44.1/OK	50-120%	FJD04-05-20190122-36-56	UJ, acenaphthene

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

The acenaphthene result in one sample was estimated due to low MS recovery.

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19011054

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19011054; Frank J. Doyle Salvage Removal Action. Two samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD04-05-20190122-36-56</u>	<u>FJD04-06-20190122-36-56</u>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 12, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution for the solid matrix for ICP metals. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Some ICP metals analytes in some samples were analyzed at a 50 or 100-fold dilution. Reporting limits for these analytes in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: Removal Soil Sampling  
 Sample ID: FJD04-05-20190122-36-56  
 Collection Date: 22-Jan-2019 12:54

**ANALYTICAL REPORT**  
 WorkOrder: HS19011054  
 Lab ID: HS19011054-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 23-Jan-2019</b>		<b>Analyst: GEY</b>	
Acenaphthene	U	U	0.00062	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Benzo(b)fluoranthene	U		0.0015	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Benzo(g,h,i)perylene	U		0.00087	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Chrysene	U		0.0010	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Pyrene	U		0.00075	0.0041	mg/Kg-dry	1	23-Jan-2019 18:17
Surr: 2-Fluorobiphenyl	54.9			43-125	%REC	1	23-Jan-2019 18:17
Surr: 4-Terphenyl-d14	79.6			32-125	%REC	1	23-Jan-2019 18:17
Surr: Nitrobenzene-d5	58.4			37-125	%REC	1	23-Jan-2019 18:17
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 23-Jan-2019</b>		<b>Analyst: JLJ</b>	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	24-Jan-2019 08:56
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	24-Jan-2019 08:56
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	24-Jan-2019 08:56
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	30-Jan-2019 03:36
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	24-Jan-2019 08:56
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	24-Jan-2019 08:56
Aroclor 1260	2.1		0.050	0.21	mg/Kg-dry	10	24-Jan-2019 10:47
Surr: Decachlorobiphenyl	92.9			54-143	%REC	1	24-Jan-2019 08:56
Surr: Decachlorobiphenyl	115	J		54-143	%REC	10	24-Jan-2019 10:47
Surr: Decachlorobiphenyl	79.9			54-143	%REC	1	30-Jan-2019 03:36
Surr: Tetrachloro-m-xylene	71.5			50-140	%REC	1	24-Jan-2019 08:56
Surr: Tetrachloro-m-xylene	82.2	J		50-140	%REC	10	24-Jan-2019 10:47
Surr: Tetrachloro-m-xylene	74.7			50-140	%REC	1	30-Jan-2019 03:36

8 atch

Client: Weston Solutions, Inc.  
 Project: Removal Soil Sampling  
 Sample ID: FJD04-05-20190122-36-56  
 Collection Date: 22-Jan-2019 12:54

**ANALYTICAL REPORT**  
 WorkOrder: HS19011054  
 Lab ID: HS19011054-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		Prep: SW3050A / 23-Jan-2019		Analyst: JCJ	
Arsenic	7.75		0.0813	0.580	mg/Kg-dry	1	23-Jan-2019 18:54
Cadmium	0.422	JJR	0.0313	0.580	mg/Kg-dry	1	23-Jan-2019 18:54
Cobalt	25.3		0.0174	0.580	mg/Kg-dry	1	23-Jan-2019 18:54
Iron	10,700		2.12	58.0	mg/Kg-dry	1	23-Jan-2019 18:54
Lead	8.00		0.0151	0.580	mg/Kg-dry	1	23-Jan-2019 18:54
Manganese	841		2.50	29.0	mg/Kg-dry	50	24-Jan-2019 12:33
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				Analyst: DFF	
Percent Moisture	20.2		0.0100	0.0100	wt%	1	23-Jan-2019 11:37

8/12/19



Client: Weston Solutions, Inc.  
 Project: Removal Soil Sampling  
 Sample ID: FJD04-06-20190122-36-56  
 Collection Date: 22-Jan-2019 13:00

**ANALYTICAL REPORT**  
 WorkOrder: HS19011054  
 Lab ID: HS19011054-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 23-Jan-2019</b>		<b>Analyst: GEY</b>	
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Benzo(b)fluoranthene	U		0.0015	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Benzo(g,h,i)perylene	U		0.00087	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Chrysene	U		0.00099	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Fluoranthene	0.0014	JR	0.0014	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Indeno(1,2,3-cd)pyrene	U		0.00099	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Naphthalene	U		0.00074	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Pyrene	0.00098	JR	0.00074	0.0041	mg/Kg-dry	1	23-Jan-2019 17:19
Surr: 2-Fluorobiphenyl	75.9			43-125	%REC	1	23-Jan-2019 17:19
Surr: 4-Terphenyl-d14	78.1			32-125	%REC	1	23-Jan-2019 17:19
Surr: Nitrobenzene-d5	78.6			37-125	%REC	1	23-Jan-2019 17:19
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 23-Jan-2019</b>		<b>Analyst: JLJ</b>	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	24-Jan-2019 09:12
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	24-Jan-2019 09:12
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	24-Jan-2019 09:12
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	24-Jan-2019 09:12
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	24-Jan-2019 09:12
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	24-Jan-2019 09:12
Aroclor 1260	0.034		0.0050	0.021	mg/Kg-dry	1	24-Jan-2019 09:12
Surr: Decachlorobiphenyl	105			54-143	%REC	1	24-Jan-2019 09:12
Surr: Tetrachloro-m-xylene	100			50-140	%REC	1	24-Jan-2019 09:12
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		<b>Prep: SW3050A / 23-Jan-2019</b>		<b>Analyst: JCJ</b>	
Arsenic	6.48		0.0831	0.593	mg/Kg-dry	1	23-Jan-2019 18:56
Cadmium	0.336	JR	0.0320	0.593	mg/Kg-dry	1	23-Jan-2019 18:56
Cobalt	6.31		0.0178	0.593	mg/Kg-dry	1	23-Jan-2019 18:56
Iron	11,500		2.17	59.3	mg/Kg-dry	1	23-Jan-2019 18:56
Lead	6.71		0.0154	0.593	mg/Kg-dry	1	23-Jan-2019 18:56
Manganese	1,380		5.10	59.3	mg/Kg-dry	100	24-Jan-2019 12:35
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				<b>Analyst: DFF</b>	
Percent Moisture	19.6		0.0100	0.0100	wt%	1	23-Jan-2019 11:37

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19011339

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19011339; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD04-03-20190128-36-56</u>	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 12, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.



8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

One PCB sample was analyzed at a dilution for Aroclor 1260. The reporting limit for Aroclor 1260 in this sample was elevated as a result of the dilution performed.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19011339

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19011339; Frank J. Doyle Salvage Removal Action. One sample was analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD04-03-20190128-36-56</u>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 12, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, “B”, may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the “J” qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19011339

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19011339; Frank J. Doyle Salvage Removal Action. One sample was analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>FJD04-03-20190128-36-56</u>	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE February 12, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution for the solid matrix for ICP metals. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Manganese in the only sample was analyzed at a 50-fold dilution. The reporting limit for manganese in this sample was elevated as a result of the dilution performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-03-20190128-36-56  
 Collection Date: 28-Jan-2019 13:12

**ANALYTICAL REPORT**  
 WorkOrder: HS19011339  
 Lab ID: HS19011339-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 29-Jan-2019		Analyst: GEY	
Acenaphthene	U		0.00059	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Acenaphthylene	U		0.0012	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Anthracene	U		0.00059	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Benz(a)anthracene	U		0.0019	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Benzo(a)pyrene	U		0.0012	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Benzo(b)fluoranthene	U		0.0014	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Benzo(g,h,i)perylene	0.0010	JQ	0.00083	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Benzo(k)fluoranthene	U		0.0011	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Chrysene	U		0.00095	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Dibenz(a,h)anthracene	U		0.0019	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Fluoranthene	U		0.0013	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Fluorene	U		0.0013	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Indeno(1,2,3-cd)pyrene	U		0.00095	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Naphthalene	0.0012	JQ	0.00071	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Phenanthrene	U		0.0018	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Pyrene	U		0.00071	0.0039	mg/Kg-dry	1	29-Jan-2019 21:50
Surr: 2-Fluorobiphenyl	68.0			43-125	%REC	1	29-Jan-2019 21:50
Surr: 4-Terphenyl-d14	86.7			32-125	%REC	1	29-Jan-2019 21:50
Surr: Nitrobenzene-d5	65.6			37-125	%REC	1	29-Jan-2019 21:50
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 29-Jan-2019		Analyst: JBA	
Aroclor 1016	U		0.0050	0.020	mg/Kg-dry	1	30-Jan-2019 02:40
Aroclor 1221	U		0.0066	0.020	mg/Kg-dry	1	30-Jan-2019 02:40
Aroclor 1232	U		0.0053	0.020	mg/Kg-dry	1	30-Jan-2019 02:40
Aroclor 1242	U		0.0070	0.020	mg/Kg-dry	1	30-Jan-2019 02:40
Aroclor 1248	U		0.0070	0.020	mg/Kg-dry	1	30-Jan-2019 02:40
Aroclor 1254	U		0.0056	0.020	mg/Kg-dry	1	30-Jan-2019 02:40
Aroclor 1260	3.1		0.047	0.20	mg/Kg-dry	10	30-Jan-2019 02:56
Surr: Decachlorobiphenyl	121			54-143	%REC	1	30-Jan-2019 02:40
Surr: Decachlorobiphenyl	106	J		54-143	%REC	10	30-Jan-2019 02:56
Surr: Tetrachloro-m-xylene	85.2			50-140	%REC	1	30-Jan-2019 02:40
Surr: Tetrachloro-m-xylene	89.2	J		50-140	%REC	10	30-Jan-2019 02:56
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 29-Jan-2019		Analyst: JCJ	
Arsenic	4.98		0.0765	0.546	mg/Kg-dry	1	29-Jan-2019 20:54
Cadmium	0.370	JQ	0.0295	0.546	mg/Kg-dry	1	29-Jan-2019 20:54
Cobalt	5.89		0.0164	0.546	mg/Kg-dry	1	29-Jan-2019 20:54
Iron	16,200		2.00	54.6	mg/Kg-dry	1	29-Jan-2019 20:54
Lead	11.8		0.0142	0.546	mg/Kg-dry	1	29-Jan-2019 20:54
Manganese	914		2.35	27.3	mg/Kg-dry	50	30-Jan-2019 13:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD04-03-20190128-36-56  
Collection Date: 28-Jan-2019 13:12

**ANALYTICAL REPORT**  
WorkOrder: HS19011339  
Lab ID: HS19011339-01  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216		Method: ASTM D2216		Analyst: DFF			
Percent Moisture	15.8		0.0100	0.0100	wt%	1	29-Jan-2019 15:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER	SDG NUMBER	HS19020082
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020082; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

DRA04-20190201-12-56

DRA05-20190201-12-56

DRA07W-20190201-24-56

FJD04-01-20190201-36-56

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski

DATE      March 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.

### 8. Duplicates:

#### A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent MS/MSD analysis for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results for the following analyte was above acceptance limits ( $\leq 25$ ):

SAMPLE ID	ANALYTE	%D	QUALIFIER FLAG
DRA05-20190201-12-56	Aroclor 1260	36.6	JK

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The Aroclor 1260 result in one sample was estimated due to the high %D between the column results.

The analytical data is acceptable for use with the qualifications listed above.



## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER      20600.012.001.1175.01      TDD NUMBER      0001/18-175

PROJECT NUMBER	SDG NUMBER	HS19020082
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020082; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

[illegible]

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE March 5, 2019

DATE March 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD04-01-20190201-36-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD04-01-20190201-36-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate with the following exceptions:

ANALYTE	MATRIX	%R/%R	QC LIMITS	AFFECTED SAMPLES	QUALIFIER FLAG
Acenaphthene Anthracene	Solid	45.7/OK OK/45.5	50-120% 50-123%	FJD04-01-20190201-36-56	UJL, acenaphthene & anthracene

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

The acenaphthene and anthracene results in one sample were estimated due to low MS or MSD recoveries.

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

**SITE NAME** Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER	20600.012.001.1175.01	TDD NUMBER	0001/18-175
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PROJECT NUMBER	SDG NUMBER	HS19020082
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020082; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) and/or Synthetic Precipitation Leaching Procedure (SPLP) metals (Mn & Ag) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

DRA04-20190201-12-56

DRA05-20190201-12-56

DRA07W-20190201-24-56

FJD04-01-20190201-36-56

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski

DATE      March 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**. Samples were extracted for SPLP metals using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data. All SPLP samples were extracted within the required holding time of less than 180 days for metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.



## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample FJD04-01-20190201-36-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for Mn & Ag for the SPLP matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

No field duplicate samples were submitted with this analytical package. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample FJD04-01-20190201-36-56 underwent MS/MSD analysis for Mn & Ag for the SPLP matrix. The spike recoveries for the all analytes were within the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more. The post digestion spike recoveries were acceptable. No qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample FJD04-01-20190201-36-56 underwent serial dilution for Mn & Ag for the SPLP matrix. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the reporting limit (RL) qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Manganese (total) in the all samples was analyzed at a 100-fold dilution. The reporting limit for manganese in these samples was elevated as a result of the dilution performed.

## 13. Laboratory Contact

No laboratory contact was required.

## 14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

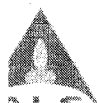
The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA04-20190201-12-56  
 Collection Date: 01-Feb-2019 15:13

**ANALYTICAL REPORT**  
 WorkOrder: HS19020082  
 Lab ID: HS19020082-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 04-Feb-2019</b>		<b>Analyst: GEY</b>	
Acenaphthene	U		0.00067	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Acenaphthylene	U		0.0013	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Anthracene	U		0.00067	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Benz(a)anthracene	U		0.0021	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Benzo(a)pyrene	U		0.0013	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Benzo(b)fluoranthene	U		0.0016	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Benzo(g,h,i)perylene	U		0.00093	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Benzo(k)fluoranthene	U		0.0012	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Chrysene	U		0.0011	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Dibenz(a,h)anthracene	U		0.0021	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Fluoranthene	U		0.0015	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Fluorene	U		0.0015	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Indeno(1,2,3-cd)pyrene	U		0.0011	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Naphthalene	U		0.00080	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Phenanthrene	U		0.0020	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Pyrene	U		0.00080	0.0044	mg/Kg-dry	1	04-Feb-2019 20:55
Surr: 2-Fluorobiphenyl	70.3			43-125	%REC	1	04-Feb-2019 20:55
Surr: 4-Terphenyl-d14	78.1			32-125	%REC	1	04-Feb-2019 20:55
Surr: Nitrobenzene-d5	65.4			37-125	%REC	1	04-Feb-2019 20:55
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 04-Feb-2019</b>		<b>Analyst: JBA</b>	
Aroclor 1016	U		0.0056	0.022	mg/Kg-dry	1	04-Feb-2019 21:03
Aroclor 1221	U		0.0075	0.022	mg/Kg-dry	1	04-Feb-2019 21:03
Aroclor 1232	U		0.0060	0.022	mg/Kg-dry	1	04-Feb-2019 21:03
Aroclor 1242	U		0.0079	0.022	mg/Kg-dry	1	04-Feb-2019 21:03
Aroclor 1248	U		0.0079	0.022	mg/Kg-dry	1	04-Feb-2019 21:03
Aroclor 1254	U		0.0063	0.022	mg/Kg-dry	1	04-Feb-2019 21:03
Aroclor 1260	0.10		0.0053	0.022	mg/Kg-dry	1	04-Feb-2019 21:03
Surr: Decachlorobiphenyl	111			54-143	%REC	1	04-Feb-2019 21:03
Surr: Tetrachloro-m-xylene	104			50-140	%REC	1	04-Feb-2019 21:03
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		<b>Prep: SW3050A / 04-Feb-2019</b>		<b>Analyst: ALR</b>	
Arsenic	3.42		0.0886	0.633	mg/Kg-dry	1	04-Feb-2019 22:02
Cadmium	0.343	JQ	0.0342	0.633	mg/Kg-dry	1	04-Feb-2019 22:02
Cobalt	4.54		0.0190	0.633	mg/Kg-dry	1	04-Feb-2019 22:02
Iron	8,880		2.32	63.3	mg/Kg-dry	1	04-Feb-2019 22:02
Lead	6.49		0.0164	0.633	mg/Kg-dry	1	04-Feb-2019 22:02
Manganese	932		5.44	63.3	mg/Kg-dry	100	05-Feb-2019 13:03
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				<b>Analyst: DFF</b>	
Percent Moisture	25.3		0.0100	0.0100	wt%	1	04-Feb-2019 11:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/25/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA05-20190201-12-56  
 Collection Date: 01-Feb-2019 14:51

**ANALYTICAL REPORT**  
 WorkOrder: HS19020082  
 Lab ID: HS19020082-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 04-Feb-2019</b>		<b>Analyst: GEY</b>	
Acenaphthene	U		0.00066	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Acenaphthylene	U		0.0013	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Anthracene	U		0.00066	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Benz(a)anthracene	U		0.0021	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Benzo(a)pyrene	U		0.0013	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Benzo(b)fluoranthene	U		0.0016	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Benzo(g,h,i)perylene	U		0.00092	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Benzo(k)fluoranthene	U		0.0012	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Chrysene	U		0.0011	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Dibenz(a,h)anthracene	U		0.0021	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Fluoranthene	U		0.0015	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Fluorene	U		0.0015	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Indeno(1,2,3-cd)pyrene	U		0.0011	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Naphthalene	U		0.00079	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Phenanthrene	U		0.0020	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Pyrene	U		0.00079	0.0044	mg/Kg-dry	1	05-Feb-2019 12:41
Surr: 2-Fluorobiphenyl	65.9			43-125	%REC	1	05-Feb-2019 12:41
Surr: 4-Terphenyl-d14	74.7			32-125	%REC	1	05-Feb-2019 12:41
Surr: Nitrobenzene-d5	61.8			37-125	%REC	1	05-Feb-2019 12:41
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 04-Feb-2019</b>		<b>Analyst: JBA</b>	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	04-Feb-2019 21:35
Aroclor 1221	U		0.0073	0.022	mg/Kg-dry	1	04-Feb-2019 21:35
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	04-Feb-2019 21:35
Aroclor 1242	U		0.0077	0.022	mg/Kg-dry	1	04-Feb-2019 21:35
Aroclor 1248	U		0.0077	0.022	mg/Kg-dry	1	04-Feb-2019 21:35
Aroclor 1254	U		0.0062	0.022	mg/Kg-dry	1	04-Feb-2019 21:35
Aroclor 1260	0.041		0.0052	0.022	mg/Kg-dry	1	04-Feb-2019 21:35
Surr: Decachlorobiphenyl	105			54-143	%REC	1	04-Feb-2019 21:35
Surr: Tetrachloro-m-xylene	101			50-140	%REC	1	04-Feb-2019 21:35
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		<b>Prep: SW3050A / 04-Feb-2019</b>		<b>Analyst: ALR</b>	
Arsenic	18.8		0.0877	0.627	mg/Kg-dry	1	04-Feb-2019 22:04
Cadmium	0.685		0.0338	0.627	mg/Kg-dry	1	04-Feb-2019 22:04
Cobalt	9.01		0.0188	0.627	mg/Kg-dry	1	04-Feb-2019 22:04
Iron	13,500		2.29	62.7	mg/Kg-dry	1	04-Feb-2019 22:04
Lead	61.4		0.0163	0.627	mg/Kg-dry	1	04-Feb-2019 22:04
Manganese	1,570		5.39	62.7	mg/Kg-dry	100	05-Feb-2019 13:05
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				<b>Analyst: DFF</b>	
Percent Moisture	24.4		0.0100	0.0100	wt%	1	04-Feb-2019 11:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA07W-20190201-24-56  
 Collection Date: 01-Feb-2019 15:02

**ANALYTICAL REPORT**

WorkOrder: HS19020082  
 Lab ID: HS19020082-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 04-Feb-2019		Analyst: GEY
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Benzo(b)fluoranthene	U		0.0015	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Benzo(g,h,i)perylene	U		0.00087	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Chrysene	U		0.0010	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Pyrene	U		0.00075	0.0041	mg/Kg-dry	1	05-Feb-2019 13:00
Surr: 2-Fluorobiphenyl	60.3			43-125	%REC	1	05-Feb-2019 13:00
Surr: 4-Terphenyl-d14	78.9			32-125	%REC	1	05-Feb-2019 13:00
Surr: Nitrobenzene-d5	57.8			37-125	%REC	1	05-Feb-2019 13:00
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 04-Feb-2019		Analyst: JBA
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	04-Feb-2019 22:54
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	04-Feb-2019 22:54
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	04-Feb-2019 22:54
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	04-Feb-2019 22:54
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	04-Feb-2019 22:54
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	04-Feb-2019 22:54
Aroclor 1260	0.045		0.0050	0.021	mg/Kg-dry	1	04-Feb-2019 22:54
Surr: Decachlorobiphenyl	110			54-143	%REC	1	04-Feb-2019 22:54
Surr: Tetrachloro-m-xylene	91.9			50-140	%REC	1	04-Feb-2019 22:54
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 04-Feb-2019		Analyst: ALR
Arsenic	3.46		0.0801	0.572	mg/Kg-dry	1	04-Feb-2019 22:06
Cadmium	0.376	+ JQ	0.0309	0.572	mg/Kg-dry	1	04-Feb-2019 22:06
Cobalt	4.25		0.0172	0.572	mg/Kg-dry	1	04-Feb-2019 22:06
Iron	9,150		2.09	57.2	mg/Kg-dry	1	04-Feb-2019 22:06
Lead	5.86		0.0149	0.572	mg/Kg-dry	1	04-Feb-2019 22:06
Manganese	1,300		4.92	57.2	mg/Kg-dry	100	05-Feb-2019 13:08
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	20.2		0.0100	0.0100	wt%	1	04-Feb-2019 11:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RATX  
 Sample ID: FJD04-01-20190201-36-56  
 Collection Date: 01-Feb-2019 15:05

**ANALYTICAL REPORT**  
 WorkOrder: HS19020082  
 Lab ID: HS19020082-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
			Method: SW8270		Prep: SW3541 / 04-Feb-2019		Analyst: GEY
Acenaphthene	U	U/L	0.00063	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Anthracene	U	U/L	0.00063	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Benz(a)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Benzo(a)pyrene	U		0.0013	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Benzo(b)fluoranthene	0.0024	U	0.0015	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Benzo(g,h,i)perylene	U		0.00089	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Benzo(k)fluoranthene	U		0.0011	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Chrysene	U		0.0010	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Fluoranthene	U		0.0014	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Naphthalene	U		0.00076	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Phenanthrene	U		0.0019	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Pyrene	U		0.00076	0.0042	mg/Kg-dry	1	04-Feb-2019 21:53
Surr: 2-Fluorobiphenyl	56.5			43-125	%REC	1	04-Feb-2019 21:53
Surr: 4-Terphenyl-d14	110			32-125	%REC	1	04-Feb-2019 21:53
Surr: Nitrobenzene-d5	60.9			37-125	%REC	1	04-Feb-2019 21:53
<b>PCBS BY SW8082A</b>							
			Method: SW8082		Prep: SW3541/3665A / 04-Feb-2019		Analyst: JBA
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	05-Feb-2019 11:40
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	05-Feb-2019 11:40
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	05-Feb-2019 11:40
Aroclor 1242	0.067		0.0075	0.021	mg/Kg-dry	1	05-Feb-2019 11:40
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	05-Feb-2019 11:40
Aroclor 1254	U		0.0060	0.021	mg/Kg-dry	1	05-Feb-2019 11:40
Aroclor 1260	0.12		0.0051	0.021	mg/Kg-dry	1	05-Feb-2019 11:40
Surr: Decachlorobiphenyl	90.9			54-143	%REC	1	05-Feb-2019 11:40
Surr: Tetrachloro-m-xylene	64.6			50-140	%REC	1	05-Feb-2019 11:40
<b>SPLP METALS BY SW6020A</b>							
			Method: SW6020		Leache: SW1312 / 05-Feb-2019		Analyst: JCJ
Manganese	0.0101		0.000700	0.00500	mg/L	1	05-Feb-2019 21:12
Silver	U		0.000200	0.00500	mg/L	1	05-Feb-2019 21:12
<b>METALS BY SW6020A</b>							
			Method: SW6020		Prep: SW3050A / 04-Feb-2019		Analyst: ALR
Arsenic	4.63		0.0859	0.614	mg/Kg-dry	1	04-Feb-2019 22:09
Cadmium	0.451	U	0.0331	0.614	mg/Kg-dry	1	04-Feb-2019 22:09
Cobalt	7.07		0.0184	0.614	mg/Kg-dry	1	04-Feb-2019 22:09
Iron	14,900		2.25	61.4	mg/Kg-dry	1	04-Feb-2019 22:09
Lead	14.4		0.0160	0.614	mg/Kg-dry	1	04-Feb-2019 22:09
Manganese	1,150		5.28	61.4	mg/Kg-dry	100	05-Feb-2019 13:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Weston Solutions, Inc.  
Project: FJ Doyle RA/TX  
Sample ID: FJD04-01-20190201-36-56  
Collection Date: 01-Feb-2019 15:05

**ANALYTICAL REPORT**

WorkOrder: HS19020082  
Lab ID: HS19020082-04  
Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
MOISTURE - ASTM D2216		Method: ASTM D2216		Analyst: DFF			
Percent Moisture	21.3		0.0100	0.0100	wt%	1	04-Feb-2019 11:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19020259

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020259; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) and/or Synthetic Precipitation Leaching Procedure (SPLP) PCBs by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA08S-20190205-18-56</u>	<u>DRA08S-20190205-18-57</u>	<u>FJD04-04-20190205-48-56</u>
_____	_____	_____
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE March 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."



## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**. Samples were extracted for SPLP PCBs using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. All SPLP samples were extracted within the required holding time of less than 14 days for PCBs. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample DRA08S-20190205-18-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. Sample FJD04-04-20190205-48-56 underwent MS analysis for the SPLP matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA08S-20190205-18-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA08S-20190205-18-56/DRA08S-20190205-18-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD):

The laboratory analyzed an LCS and/or LCSD and recoveries and relative percent difference (RPD) values were within the control limits provided. No qualifications are placed on the data.

10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

11. Laboratory Contact:

No laboratory contact was required.

12. Overall Assessment:

The analytical data is acceptable for use without qualification.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19020259

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020259; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA08S-20190205-18-56</u>	<u>DRA08S-20190205-18-57</u>	<u>FJD04-04-20190205-48-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE March 5, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample FJD04-04-20190205-48-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA08S-20190205-18-56/DRA08S-20190205-18-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample FJD04-04-20190205-48-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19020259

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020259; Frank J. Doyle Salvage Removal Action. Three samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) and/or Synthetic Precipitation Leaching Procedure (SPLP) metals (Mn & Ag) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA08S-20190205-18-56</u>	<u>DRA08S-20190205-18-57</u>	<u>FJD04-04-20190205-48-56</u>
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This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE March 5, 2019



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**. Samples were extracted for SPLP metals using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data. All SPLP samples were extracted within the required holding time of less than 180 days for metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

No sample from this analytical package underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA08S-20190205-18-56/DRA08S-20190205-18-57. QC criteria are that the relative percent difference (RPD) values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

10. Spiked Sample Analysis:

No sample from this analytical package underwent MS/MSD analysis for ICP metals for the solid or SPLP matrix. No qualifications are placed on the data.

11. ICP Serial Dilution:

No sample from this analytical package underwent serial dilution for the solid or SPLP matrix for ICP metals. No qualifications are placed on the data.

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

Iron and/or manganese (total) in all samples were analyzed at a 50-fold dilution. The reporting limits for iron and/or manganese (total) in these samples were elevated as a result of the dilutions performed.

13. Laboratory Contact

No laboratory contact was required.

14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA08S-20190205-18-56  
 Collection Date: 05-Feb-2019 14:20

**ANALYTICAL REPORT**  
 WorkOrder: HS19020259  
 Lab ID: HS19020259-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 06-Feb-2019		Analyst: GEY	
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Benzo(a)pyrene	0.0014	JJ	0.0012	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Benzo(b)fluoranthene	0.0026	JJ	0.0015	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Benzo(g,h,i)perylene	U		0.00087	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Benzo(k)fluoranthene	0.0017	JJ	0.0011	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Chrysene	0.0024	JJ	0.00099	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Fluoranthene	0.0020	JJ	0.0014	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Indeno(1,2,3-cd)pyrene	U		0.00099	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Naphthalene	U		0.00075	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Pyrene	0.0021	JJ	0.00075	0.0041	mg/Kg-dry	1	06-Feb-2019 20:05
Surr: 2-Fluorobiphenyl	69.1			43-125	%REC	1	06-Feb-2019 20:05
Surr: 4-Terphenyl-d14	75.8			32-125	%REC	1	06-Feb-2019 20:05
Surr: Nitrobenzene-d5	60.0			37-125	%REC	1	06-Feb-2019 20:05
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 06-Feb-2019		Analyst: JBA	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	06-Feb-2019 19:20
Aroclor 1221	U		0.0069	0.021	mg/Kg-dry	1	06-Feb-2019 19:20
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	06-Feb-2019 19:20
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	06-Feb-2019 19:20
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	06-Feb-2019 19:20
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	06-Feb-2019 19:20
Aroclor 1260	0.087		0.0050	0.021	mg/Kg-dry	1	06-Feb-2019 19:20
Surr: Decachlorobiphenyl	90.7			54-143	%REC	1	06-Feb-2019 19:20
Surr: Tetrachloro-m-xylene	74.4			50-140	%REC	1	06-Feb-2019 19:20
<b>METALS BY SW6020A</b>		Method: SW6020		Prep: SW3050A / 06-Feb-2019		Analyst: JCJ	
Arsenic	5.75		0.0822	0.587	mg/Kg-dry	1	06-Feb-2019 17:44
Cadmium	0.380	JJ	0.0317	0.587	mg/Kg-dry	1	06-Feb-2019 17:44
Cobalt	14.2		0.0176	0.587	mg/Kg-dry	1	06-Feb-2019 17:44
Iron	30,800		107	2940	mg/Kg-dry	50	07-Feb-2019 13:11
Lead	23.6		0.0153	0.587	mg/Kg-dry	1	06-Feb-2019 17:44
Manganese	2,250		2.52	29.4	mg/Kg-dry	50	07-Feb-2019 13:11
<b>MOISTURE - ASTM D2216</b>		Method: ASTM D2216				Analyst: DFF	
Percent Moisture	19.6		0.0100	0.0100	wt%	1	06-Feb-2019 14:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.



8/35/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA08S-20190205-18-57  
 Collection Date: 05-Feb-2019 14:20

**ANALYTICAL REPORT**  
 WorkOrder: HS19020259  
 Lab ID: HS19020259-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 06-Feb-2019		Analyst: GEY
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Benzo(b)fluoranthene	U		0.0015	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Benzo(g,h,i)perylene	U		0.00087	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Chrysene	U		0.0010	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Naphthalene	0.0081		0.00075	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Pyrene	0.00077	JP	0.00075	0.0041	mg/Kg-dry	1	06-Feb-2019 20:24
Surr: 2-Fluorobiphenyl	64.1			43-125	%REC	1	06-Feb-2019 20:24
Surr: 4-Terphenyl-d14	70.6			32-125	%REC	1	06-Feb-2019 20:24
Surr: Nitrobenzene-d5	58.9			37-125	%REC	1	06-Feb-2019 20:24
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 06-Feb-2019		Analyst: JBA
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	06-Feb-2019 21:43
Aroclor 1221	U		0.0070	0.021	mg/Kg-dry	1	06-Feb-2019 21:43
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	06-Feb-2019 21:43
Aroclor 1242	U		0.0074	0.021	mg/Kg-dry	1	06-Feb-2019 21:43
Aroclor 1248	U		0.0074	0.021	mg/Kg-dry	1	06-Feb-2019 21:43
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	06-Feb-2019 21:43
Aroclor 1260	0.085		0.0050	0.021	mg/Kg-dry	1	06-Feb-2019 21:43
Surr: Decachlorobiphenyl	95.1			54-143	%REC	1	06-Feb-2019 21:43
Surr: Tetrachloro-m-xylene	87.5			50-140	%REC	1	06-Feb-2019 21:43
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 06-Feb-2019		Analyst: JCJ
Arsenic	5.49		0.0829	0.592	mg/Kg-dry	1	06-Feb-2019 17:46
Cadmium	0.381	JP	0.0320	0.592	mg/Kg-dry	1	06-Feb-2019 17:46
Cobalt	13.4		0.0178	0.592	mg/Kg-dry	1	06-Feb-2019 17:46
Iron	30,300		108	2960	mg/Kg-dry	50	07-Feb-2019 13:13
Lead	20.9		0.0154	0.592	mg/Kg-dry	1	06-Feb-2019 17:46
Manganese	2,110		2.55	29.6	mg/Kg-dry	50	07-Feb-2019 13:13
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	20.2		0.0100	0.0100	wt%	1	06-Feb-2019 14:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

8/25/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-04-20190205-48-56  
 Collection Date: 05-Feb-2019 14:28

## ANALYTICAL REPORT

WorkOrder: HS19020259  
 Lab ID: HS19020259-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
			Method: SW8270		Prep: SW3541 / 06-Feb-2019		Analyst: GEY
Acenaphthene	U		0.00063	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Acenaphthylene	U		0.0013	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Anthracene	U		0.00063	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Benz(a)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Benzo(a)pyrene	U		0.0013	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Benzo(b)fluoranthene	U		0.0015	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Benzo(g,h,i)perylene	U		0.00089	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Benzo(k)fluoranthene	U		0.0011	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Chrysene	U		0.0010	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Dibenz(a,h)anthracene	U		0.0020	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Fluoranthene	U		0.0014	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Fluorene	U		0.0014	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Naphthalene	0.0019	JG	0.00076	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Phenanthrene	U		0.0019	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Pyrene	U		0.00076	0.0042	mg/Kg-dry	1	06-Feb-2019 20:43
Surr: 2-Fluorobiphenyl	70.3			43-125	%REC	1	06-Feb-2019 20:43
Surr: 4-Terphenyl-d14	75.5			32-125	%REC	1	06-Feb-2019 20:43
Surr: Nitrobenzene-d5	59.3			37-125	%REC	1	06-Feb-2019 20:43
<b>SPLP PCBS BY SW8082A</b>							
			Method: SW1312/8082		Leache: SW1312 / 07-Feb-2019		Analyst: JBA
Aroclor 1016	U		0.10	0.52	ug/L	1	07-Feb-2019 16:54
Aroclor 1221	U		0.10	0.52	ug/L	1	07-Feb-2019 16:54
Aroclor 1232	U		0.10	0.52	ug/L	1	07-Feb-2019 16:54
Aroclor 1242	U		0.10	0.52	ug/L	1	07-Feb-2019 16:54
Aroclor 1248	U		0.10	0.52	ug/L	1	07-Feb-2019 16:54
Aroclor 1254	U		0.10	0.52	ug/L	1	07-Feb-2019 16:54
Aroclor 1260	U		0.10	0.52	ug/L	1	07-Feb-2019 16:54
Surr: Decachlorobiphenyl	90.7			30-150	%REC	1	07-Feb-2019 16:54
Surr: Tetrachloro-m-xylene	95.6			30-150	%REC	1	07-Feb-2019 16:54
<b>PCBS BY SW8082A</b>							
			Method: SW8082		Prep: SW3541/3665A / 06-Feb-2019		Analyst: JBA
Aroclor 1016	U		0.0053	0.021	mg/Kg-dry	1	06-Feb-2019 22:14
Aroclor 1221	U		0.0071	0.021	mg/Kg-dry	1	06-Feb-2019 22:14
Aroclor 1232	U		0.0057	0.021	mg/Kg-dry	1	06-Feb-2019 22:14
Aroclor 1242	U		0.0075	0.021	mg/Kg-dry	1	06-Feb-2019 22:14
Aroclor 1248	U		0.0075	0.021	mg/Kg-dry	1	06-Feb-2019 22:14
Aroclor 1254	U		0.0059	0.021	mg/Kg-dry	1	06-Feb-2019 22:14
Aroclor 1260	0.029		0.0051	0.021	mg/Kg-dry	1	06-Feb-2019 22:14
Surr: Decachlorobiphenyl	92.4			54-143	%REC	1	06-Feb-2019 22:14
Surr: Tetrachloro-m-xylene	69.9			50-140	%REC	1	06-Feb-2019 22:14

Note: See Qualifiers Page for a list of qualifiers and their explanation.



3/5/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-04-20190205-48-56  
 Collection Date: 05-Feb-2019 14:28

**ANALYTICAL REPORT**  
 WorkOrder: HS19020259  
 Lab ID: HS19020259-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>SPLP METALS BY SW6020A</b>							
	Method: SW6020		Leache: SW1312 / 07-Feb-2019		Prep: SW3010A / 07-Feb-2019		Analyst: JHD
Manganese	0.0586		0.000700	0.00500	mg/L	1	07-Feb-2019 17:28
Silver	U		0.000200	0.00500	mg/L	1	07-Feb-2019 17:28
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 06-Feb-2019		Analyst: JCJ
Arsenic	4.45		0.0832	0.595	mg/Kg-dry	1	06-Feb-2019 17:48
Cadmium	0.357	J JC	0.0321	0.595	mg/Kg-dry	1	06-Feb-2019 17:48
Cobalt	7.81		0.0178	0.595	mg/Kg-dry	1	06-Feb-2019 17:48
Iron	15,400		2.18	59.5	mg/Kg-dry	1	06-Feb-2019 17:48
Lead	12.4		0.0155	0.595	mg/Kg-dry	1	06-Feb-2019 17:48
Manganese	1,070		2.56	29.7	mg/Kg-dry	50	07-Feb-2019 13:16
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	21.1		0.0100	0.0100	wt%	1	06-Feb-2019 14:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.



3/5/19

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19020713

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020713; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for Polychlorinated Biphenyl Compounds (PCBs) and/or Synthetic Precipitation Leaching Procedure (SPLP) PCBs by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA07E-20190213-48-56</u>	<u>DRA07E-20190213-48-57</u>	<u>DRA08N-20190213-18-56</u>
<u>FJD04-02-20190213-48-56</u>		

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE March 11, 2019



## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

- L Low bias
- H High bias
- K Unknown bias
- Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PCB FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for PCBs using the procedures specified in **SW-846 Method 8082A**. Samples were extracted for SPLP PCBs using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 1 year after collection. Analysis of the samples was conducted within 40 days of extraction. All SPLP samples were extracted within the required holding time of less than 14 days for PCBs. No qualifications are placed on the data.

### 3. Initial Calibration:

The correlation coefficient of the multipoint initial calibration was greater than or equal to 0.995 or the percent relative standard deviation (%RSD) was less than or equal to 20%. No qualifications are placed on the data.

### 4. Continuing Calibration:

The continuing calibration check was analyzed at the required frequency and met recovery requirements of 75%-125% [percent difference (%D) was less than 25%]. No qualifications are placed on the data.

### 5. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. No target analytes were detected in the method blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 6. Surrogates:

All recoveries of the surrogates were within the control limits provided. No qualifications are placed on the data.

### 7. Matrix Spikes/Matrix Spike Duplicates (MS/MSD):

Sample DRA08N-20190213-18-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data. Sample FJD04-02-20190213-48-56 underwent MS analysis for the SPLP matrix. Recoveries of all spiked analytes were within the control limits provided. No qualifications are placed on the data.

## 8. Duplicates:

### A. Laboratory Duplicate Analysis:

Sample DRA08N-20190213-18-56 underwent MS/MSD analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA07E-20190213-48-56/DRA07E-20190213-48-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

## 9. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD):

The laboratory analyzed an LCS and/or LCSD and recoveries and relative percent difference (RPD) values were within the control limits provided. No qualifications are placed on the data.

## 10. Target Compound Identification, Quantitation, and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

The %D between the column results were within the acceptance limits ( $\leq 25$ ). No qualifications are placed on the data.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

## 11. Laboratory Contact:

The laboratory was contacted on March 7, 2019 regarding duplicate results for all Aroclor for the SPLP sample. An acceptable response was received on March 8, 2019.

## 12. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

## DATA QUALITY ASSURANCE REVIEW

SITE NAME Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER 20600.012.001.1175.01 TDD NUMBER 0001/18-175

PROJECT NUMBER \_\_\_\_\_ SDG NUMBER HS19020713

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020713; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) by ALS Environmental. Sample numbers are listed below.

### SAMPLE NUMBERS

<u>DRA07E-20190213-48-56</u>	<u>DRA07E-20190213-48-57</u>	<u>DRA08N-20190213-18-56</u>
<u>FJD04-02-20190213-48-56</u>		

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE March 7, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## PAH FRACTION EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed using the procedures specified in **SW-846 Method 8270D selective ion monitoring (SIM)**.

### 2. Holding Time:

The samples were received within the recommended  $\leq 6^{\circ}\text{C}$  NFG limit. All samples were extracted within the required holding time of less than 7 days for waters and less than 14 days for solids/wastes after collection. Analysis of the samples was conducted within 40 days of extraction. No qualifications are placed on the data.

### 3. Tuning/Performance:

DFTPP tuning of the mass spectrometer(s) was conducted at the required frequency and results were within the required criteria. No qualifications are placed on the data.

### 4. Initial Calibration:

All individual relative response factors (RRFs) and average RRFs for the initial calibration (IC) were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent relative standard deviations (%RSDs) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits or the correlation coefficient was  $> 0.990$ . No qualifications are placed on the data.

### 5. Continuing Calibration:

All individual RRFs for the initial calibration verification (ICV) and continuing calibration (CC) standards were greater than the compound dependent (see Table 34 of National Functional Guidelines) control limits. All percent differences (%Ds) were less than the compound dependent (see Table 34 of National Functional Guidelines) control limits. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and concentration or every 20 samples whichever is greater. Target analytes were not detected in the method at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. System Monitoring Compounds (SMC):

All recoveries of the system monitoring compounds (surrogates) were within the control limits provided. No qualifications are placed on the data.

8. Duplicates:

A. Laboratory Duplicate Analysis:

Sample DRA08N-20190213-18-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA07E-20190213-48-56/DRA07E-20190213-48-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

9. Matrix Spike/Matrix Spike Duplicate:

Sample DRA08N-20190213-18-56 underwent MS/MSD analysis for the solid matrix. Recoveries of all spiked analytes were within the control limits provided in both the matrix spike and matrix spike duplicate. No qualifications are placed on the data.

10. Internal Standards:

Areas of the six internal standards were within the control limits of a factor of 2 (-50% to +100%) and retention times were within 30 seconds from the associated 12 hour calibration standard. No qualifications are placed on the data.

11. Laboratory Control Sample (LCS):

The laboratory analyzed an LCS and recoveries were within the control limits provided. No qualifications are placed on the data.

12. Target Compound Identification:

All target compounds reported by the laboratory met identification criteria of relative retention times (RRT) within 0.06 RRT units of the 12 hour standard and that all ions present in the standard mass spectrum were present in the sample mass spectrum and the abundance of these ions agreed within  $\pm 20\%$  of the standard. No qualifications are placed on the data.

13. Target Compound Quantitation and Reporting Limits:

Concentrations of all reported compounds were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the method detection limit (MDL).

14. Laboratory Contact:

No laboratory contact was required.

15. Overall Assessment

Reported concentrations less than the RL qualified “J” by the laboratory were qualified “JQ” to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.



## DATA QUALITY ASSURANCE REVIEW

**SITE NAME** Frank J. Doyle Salvage Removal Action

WORK ORDER NUMBER	20600.012.001.1175.01	TDD NUMBER	0001/18-175
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PROJECT NUMBER	SDG NUMBER	HS19020713
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Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20600.012.001.1175.01; SDG No. HS19020713; Frank J. Doyle Salvage Removal Action. Four samples were analyzed for metals (As, Cd, Co, Fe, Pb, & Mn) and/or Synthetic Precipitation Leaching Procedure (SPLP) metals (Mn & Ag) by ALS Environmental. Sample numbers are listed below.

## SAMPLE NUMBERS

DRA07E-20190213-48-56

DRA07E-20190213-48-57

DRA08N-20190213-18-56

FJD04-02-20190213-48-56

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (January, 2017), *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (January, 2017), *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April, 2016), *Quality Assurance/Quality Control Guidance for Removal Activities* (September, 2011), and/or the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski

DATE      March 7, 2019

## Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifiers may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Additional qualifiers utilized by WESTON are H, L, K, B, and Q.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

## METALS DATA EVALUATION

### 1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Method 6020A**. Samples were extracted for SPLP metals using the procedure specified in **SW-846 Method 1312**.

### 2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals. No qualifications are placed on the data. All SPLP samples were extracted within the required holding time of less than 180 days for metals. No qualifications are placed on the data.

### 3. Initial Calibration:

ICP initial calibration included a blank and five standards and initial calibration verification results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. No qualifications are placed on the data.

### 5. CRDL Standard:

All results for the CRDL standard were within the control limits of 70% to 130% of the true values or the sample results were greater than the CRDL action level. No qualifications are placed on the data.

### 6. Blanks:

#### A. Laboratory Blanks:

A method blank was prepared at the required frequency of every time samples were prepared/digested for each matrix or every 20 samples whichever is greater. Target analytes were not detected in the method and calibration blanks at concentrations that warrant blank action. No qualifications are placed on the data.

#### B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

### 7. ICP Interference Check:

All results for the interference check sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

### 8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

## 9. Duplicate Sample Analysis:

### A. Laboratory Duplicate Analysis:

Sample DRA08N-20190213-18-56 underwent matrix spike/matrix spike duplicate (MS/MSD) analysis for ICP metals for the solid matrix. QC criteria are that the relative percent difference (RPD) values for the duplicate sample analysis are less than 20% for aqueous samples and less than 35% for solid samples. All QC criteria were met. No qualifications are placed on the data.

### B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: DRA07E-20190213-48-56/DRA07E-20190213-48-57. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

## 10. Spiked Sample Analysis:

Sample DRA08N-20190213-18-56 underwent MS/MSD analysis for ICP metals for the solid matrix. The spike recoveries for the all analytes were within the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more. The post digestion spike recoveries were acceptable. No qualifications are placed on the data.

## 11. ICP Serial Dilution:

Sample DRA08N-20190213-18-56 underwent serial dilution for the solid matrix. The percent difference (%D) values for serial dilution analysis were within the QC limits of 10% for all analytes whose concentrations were greater than 50 times their method detection limit (MDL). No qualifications are placed on the data.

## 12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Reported concentrations less than the RL qualified "J" by the laboratory are qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

Iron and/or manganese (total) in all samples were analyzed at a 50 or 100-fold dilution. The reporting limits for iron and/or manganese (total) in these samples were elevated as a result of the dilutions performed.

## 13. Laboratory Contact

No laboratory contact was required.

## 14. Overall Assessment:

Reported concentrations less than the RL qualified "J" by the laboratory were qualified "JQ" to indicate that the result is less than the RL but greater than the MDL.

The analytical data is acceptable for use with the qualifications listed above.

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA07E-20190213-48-56  
 Collection Date: 13-Feb-2019 14:53

**ANALYTICAL REPORT**  
 WorkOrder: HS19020713  
 Lab ID: HS19020713-01  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>							
	Method: SW8270				Prep: SW3541 / 14-Feb-2019		Analyst: GEY
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Benzo(b)fluoranthene	U		0.0015	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Benzo(g,h,i)perylene	0.0012	JR	0.00087	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Chrysene	U		0.00099	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Indeno(1,2,3-cd)pyrene	U		0.00099	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Naphthalene	U		0.00074	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Pyrene	U		0.00074	0.0041	mg/Kg-dry	1	15-Feb-2019 15:33
Surr: 2-Fluorobiphenyl	55.4			43-125	%REC	1	15-Feb-2019 15:33
Surr: 4-Terphenyl-d14	63.3			32-125	%REC	1	15-Feb-2019 15:33
Surr: Nitrobenzene-d5	52.2			37-125	%REC	1	15-Feb-2019 15:33
<b>PCBS BY SW8082A</b>							
	Method: SW8082				Prep: SW3541/3665A / 14-Feb-2019		Analyst: JBA
Aroclor 1016	0.0092	JR	0.0052	0.021	mg/Kg-dry	1	14-Feb-2019 22:42
Aroclor 1221	U		0.0069	0.021	mg/Kg-dry	1	14-Feb-2019 22:42
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	14-Feb-2019 22:42
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	14-Feb-2019 22:42
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	14-Feb-2019 22:42
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	14-Feb-2019 22:42
Aroclor 1260	0.068		0.0049	0.021	mg/Kg-dry	1	14-Feb-2019 22:42
Surr: Decachlorobiphenyl	87.9			54-143	%REC	1	14-Feb-2019 22:42
Surr: Tetrachloro-m-xylene	69.0			50-140	%REC	1	14-Feb-2019 22:42
<b>METALS BY SW6020A</b>							
	Method: SW6020				Prep: SW3050A / 14-Feb-2019		Analyst: JHD
Arsenic	5.93		0.0801	0.572	mg/Kg-dry	1	15-Feb-2019 00:10
Cadmium	0.523	JR	0.0309	0.572	mg/Kg-dry	1	15-Feb-2019 00:10
Cobalt	6.27		0.0172	0.572	mg/Kg-dry	1	15-Feb-2019 00:10
Iron	11,700		2.09	57.2	mg/Kg-dry	1	15-Feb-2019 00:10
Lead	7.81		0.0149	0.572	mg/Kg-dry	1	15-Feb-2019 00:10
Manganese	1,100		4.92	57.2	mg/Kg-dry	100	15-Feb-2019 14:17
<b>MOISTURE - ASTM D2216</b>							
	Method: ASTM D2216						Analyst: DFF
Percent Moisture	19.4		0.0100	0.0100	wt%	1	14-Feb-2019 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1



Handwritten signature/initials: *JS JR*

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA07E-20190213-48-57  
 Collection Date: 13-Feb-2019 14:53

**ANALYTICAL REPORT**

WorkOrder: HS19020713  
 Lab ID: HS19020713-02  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		Prep: SW3541 / 14-Feb-2019		Analyst: GEY	
Acenaphthene	U		0.00062	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Acenaphthylene	U		0.0012	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Anthracene	U		0.00062	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Benz(a)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Benzo(a)pyrene	U		0.0012	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Benzo(b)fluoranthene	U		0.0015	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Benzo(g,h,i)perylene	U		0.00087	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Benzo(k)fluoranthene	U		0.0011	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Chrysene	U		0.00099	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Dibenz(a,h)anthracene	U		0.0020	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Fluoranthene	U		0.0014	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Fluorene	U		0.0014	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Indeno(1,2,3-cd)pyrene	U		0.00099	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Naphthalene	U		0.00074	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Phenanthrene	U		0.0019	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Pyrene	U		0.00074	0.0041	mg/Kg-dry	1	15-Feb-2019 15:52
Surr: 2-Fluorobiphenyl	52.1			43-125	%REC	1	15-Feb-2019 15:52
Surr: 4-Terphenyl-d14	64.6			32-125	%REC	1	15-Feb-2019 15:52
Surr: Nitrobenzene-d5	54.0			37-125	%REC	1	15-Feb-2019 15:52
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		Prep: SW3541/3665A / 14-Feb-2019		Analyst: JBA	
Aroclor 1016	U		0.0052	0.021	mg/Kg-dry	1	15-Feb-2019 00:35
Aroclor 1221	U		0.0069	0.021	mg/Kg-dry	1	15-Feb-2019 00:35
Aroclor 1232	U		0.0056	0.021	mg/Kg-dry	1	15-Feb-2019 00:35
Aroclor 1242	U		0.0073	0.021	mg/Kg-dry	1	15-Feb-2019 00:35
Aroclor 1248	U		0.0073	0.021	mg/Kg-dry	1	15-Feb-2019 00:35
Aroclor 1254	U		0.0058	0.021	mg/Kg-dry	1	15-Feb-2019 00:35
Aroclor 1260	0.077		0.0050	0.021	mg/Kg-dry	1	15-Feb-2019 00:35
Surr: Decachlorobiphenyl	86.8			54-143	%REC	1	15-Feb-2019 00:35
Surr: Tetrachloro-m-xylene	68.6			50-140	%REC	1	15-Feb-2019 00:35
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		Prep: SW3050A / 14-Feb-2019		Analyst: JHD	
Arsenic	5.01		0.0824	0.588	mg/Kg-dry	1	15-Feb-2019 00:12
Cadmium	0.352		0.0318	0.588	mg/Kg-dry	1	15-Feb-2019 00:12
Cobalt	5.24		0.0177	0.588	mg/Kg-dry	1	15-Feb-2019 00:12
Iron	10,100		2.15	58.8	mg/Kg-dry	1	15-Feb-2019 00:12
Lead	5.46		0.0153	0.588	mg/Kg-dry	1	15-Feb-2019 00:12
Manganese	1,160		5.06	58.8	mg/Kg-dry	100	15-Feb-2019 14:19
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				Analyst: DFF	
Percent Moisture	19.4		0.0100	0.0100	wt%	1	14-Feb-2019 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1



3/17/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: DRA08N-20190213-18-56  
 Collection Date: 13-Feb-2019 14:44

**ANALYTICAL REPORT**  
 WorkOrder: HS19020713  
 Lab ID: HS19020713-03  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		<b>Method: SW8270</b>		<b>Prep: SW3541 / 14-Feb-2019</b>		<b>Analyst: GEY</b>	
Acenaphthene	U		0.00066	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Acenaphthylene	U		0.0013	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Anthracene	U		0.00066	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Benz(a)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Benzo(a)pyrene	U		0.0013	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Benzo(b)fluoranthene	U		0.0016	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Benzo(g,h,i)perylene	0.0025	JJQ	0.00092	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Benzo(k)fluoranthene	U		0.0012	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Chrysene	0.0013	JJQ	0.0010	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Dibenz(a,h)anthracene	U		0.0021	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Fluoranthene	U		0.0014	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Fluorene	U		0.0014	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Indeno(1,2,3-cd)pyrene	U		0.0010	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Naphthalene	U		0.00079	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Phenanthrene	U		0.0020	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Pyrene	0.0014	JJQ	0.00079	0.0043	mg/Kg-dry	1	15-Feb-2019 16:12
Surr: 2-Fluorobiphenyl	62.3			43-125	%REC	1	15-Feb-2019 16:12
Surr: 4-Terphenyl-d14	63.7			32-125	%REC	1	15-Feb-2019 16:12
Surr: Nitrobenzene-d5	51.4			37-125	%REC	1	15-Feb-2019 16:12
<b>PCBS BY SW8082A</b>		<b>Method: SW8082</b>		<b>Prep: SW3541/3665A / 14-Feb-2019</b>		<b>Analyst: JBA</b>	
Aroclor 1016	U		0.0055	0.022	mg/Kg-dry	1	14-Feb-2019 21:38
Aroclor 1221	U		0.0074	0.022	mg/Kg-dry	1	14-Feb-2019 21:38
Aroclor 1232	U		0.0059	0.022	mg/Kg-dry	1	14-Feb-2019 21:38
Aroclor 1242	U		0.0078	0.022	mg/Kg-dry	1	14-Feb-2019 21:38
Aroclor 1248	U		0.0078	0.022	mg/Kg-dry	1	14-Feb-2019 21:38
Aroclor 1254	U		0.0062	0.022	mg/Kg-dry	1	14-Feb-2019 21:38
Aroclor 1260	0.017	JJQ	0.0053	0.022	mg/Kg-dry	1	14-Feb-2019 21:38
Surr: Decachlorobiphenyl	93.6			54-143	%REC	1	14-Feb-2019 21:38
Surr: Tetrachloro-m-xylene	97.8			50-140	%REC	1	14-Feb-2019 21:38
<b>METALS BY SW6020A</b>		<b>Method: SW6020</b>		<b>Prep: SW3050A / 14-Feb-2019</b>		<b>Analyst: JHD</b>	
Arsenic	5.64		0.0855	0.610	mg/Kg-dry	1	14-Feb-2019 23:54
Cadmium	0.368	JJQ	0.0330	0.610	mg/Kg-dry	1	14-Feb-2019 23:54
Cobalt	10.1		0.0183	0.610	mg/Kg-dry	1	14-Feb-2019 23:54
Iron	28,800		112	3050	mg/Kg-dry	50	15-Feb-2019 13:31
Lead	20.0		0.0159	0.610	mg/Kg-dry	1	14-Feb-2019 23:54
Manganese	1,070		2.62	30.5	mg/Kg-dry	50	15-Feb-2019 13:31
<b>MOISTURE - ASTM D2216</b>		<b>Method: ASTM D2216</b>				<b>Analyst: DFF</b>	
Percent Moisture	24.2		0.0100	0.0100	wt%	1	14-Feb-2019 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1



2/27/19

Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-02-20190213-48-56  
 Collection Date: 13-Feb-2019 15:06

**ANALYTICAL REPORT**  
 WorkOrder: HS19020713  
 Lab ID: HS19020713-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL PAHS</b>		Method: SW8270		Prep: SW3541 / 14-Feb-2019		Analyst: GEY	
Acenaphthene	U		0.00058	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Acenaphthylene	U		0.0012	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Anthracene	U		0.00058	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Benz(a)anthracene	U		0.0019	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Benzo(a)pyrene	0.0016	JJ	0.0012	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Benzo(b)fluoranthene	0.0023	JJ	0.0014	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Benzo(g,h,i)perylene	0.0016	JJ	0.00081	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Benzo(k)fluoranthene	U		0.0010	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Chrysene	U		0.00093	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Dibenz(a,h)anthracene	U		0.0019	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Fluoranthene	U		0.0013	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Fluorene	U		0.0013	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Indeno(1,2,3-cd)pyrene	0.0017	JJ	0.00093	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Naphthalene	U		0.00070	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Phenanthrene	U		0.0017	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Pyrene	U		0.00070	0.0038	mg/Kg-dry	1	15-Feb-2019 16:31
Surr: 2-Fluorobiphenyl	46.5			43-125	%REC	1	15-Feb-2019 16:31
Surr: 4-Terphenyl-d14	60.3			32-125	%REC	1	15-Feb-2019 16:31
Surr: Nitrobenzene-d5	41.6			37-125	%REC	1	15-Feb-2019 16:31
<b>SPLP PCBS BY SW8082A</b>		Method: SW1312/8082		Leache: SW1312 / 15-Feb-2019		Prep: SW3510C/3665A / 18-Feb-2019	
Aroclor 1016	U		0.10	0.51	ug/L	1	18-Feb-2019 23:00
Aroclor 1221	U		0.10	0.51	ug/L	1	18-Feb-2019 23:00
Aroclor 1232	U		0.10	0.51	ug/L	1	18-Feb-2019 23:00
Aroclor 1242	U		0.10	0.51	ug/L	1	18-Feb-2019 23:00
Aroclor 1248	U		0.10	0.51	ug/L	1	18-Feb-2019 23:00
Aroclor 1254	U		0.10	0.51	ug/L	1	18-Feb-2019 23:00
Aroclor 1260	U		0.10	0.51	ug/L	1	18-Feb-2019 23:00
Surr: Decachlorobiphenyl	84.8			30-150	%REC	1	18-Feb-2019 23:00
Surr: Tetrachloro-m-xylene	95.0			30-150	%REC	1	18-Feb-2019 23:00
<b>PCBS BY SW8082A</b>		Method: SW8082		Prep: SW3541/3665A / 14-Feb-2019		Analyst: JBA	
Aroclor 1016	U		0.0049	0.019	mg/Kg-dry	1	15-Feb-2019 01:06
Aroclor 1221	U		0.0065	0.019	mg/Kg-dry	1	15-Feb-2019 01:06
Aroclor 1232	U		0.0052	0.019	mg/Kg-dry	1	15-Feb-2019 01:06
Aroclor 1242	U		0.0068	0.019	mg/Kg-dry	1	15-Feb-2019 01:06
Aroclor 1248	U		0.0068	0.019	mg/Kg-dry	1	15-Feb-2019 01:06
Aroclor 1254	U		0.0055	0.019	mg/Kg-dry	1	15-Feb-2019 01:06
Aroclor 1260	0.21		0.0046	0.019	mg/Kg-dry	1	15-Feb-2019 01:06
Surr: Decachlorobiphenyl	88.6			54-143	%REC	1	15-Feb-2019 01:06
Surr: Tetrachloro-m-xylene	66.5			50-140	%REC	1	15-Feb-2019 01:06

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 2



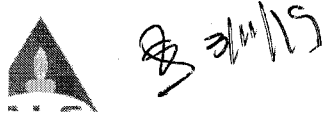
5/2/19



Client: Weston Solutions, Inc.  
 Project: FJ Doyle RA/TX  
 Sample ID: FJD04-02-20190213-48-56  
 Collection Date: 13-Feb-2019 15:06

**ANALYTICAL REPORT**  
 WorkOrder: HS19020713  
 Lab ID: HS19020713-04  
 Matrix: Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SPLP METALS BY SW6020A			Method:SW6020	Leache:SW1312 / 15-Feb-2019	Prep:SW3010A / 15-Feb-2019		Analyst: JCJ
Manganese	0.0389		0.000700	0.00500	mg/L	1	15-Feb-2019 16:16
Silver	U		0.000200	0.00500	mg/L	1	15-Feb-2019 16:16
METALS BY SW6020A			Method:SW6020		Prep:SW3050A / 14-Feb-2019		Analyst: JHD
Arsenic	4.08		0.0770	0.550	mg/Kg-dry	1	15-Feb-2019 00:14
Cadmium	0.322	JR	0.0297	0.550	mg/Kg-dry	1	15-Feb-2019 00:14
Cobalt	6.12		0.0165	0.550	mg/Kg-dry	1	15-Feb-2019 00:14
Iron	9,760		2.01	55.0	mg/Kg-dry	1	15-Feb-2019 00:14
Lead	6.80		0.0143	0.550	mg/Kg-dry	1	15-Feb-2019 00:14
Manganese	1,310		4.73	55.0	mg/Kg-dry	100	15-Feb-2019 14:22
MOISTURE - ASTM D2216			Method:ASTM D2216		Analyst: DFF		
Percent Moisture	14.1		0.0100	0.0100	wt%	1	14-Feb-2019 11:52



**APPENDIX I**  
**COMFORT LETTERS**



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

Terry McCalpin, City of Leonard, City Administrator  
P.O. Box 1270  
Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification, City of Leonard Right-of-Way Properties (DRA\_, EAS\_)  
Soil Removal Action at 905 N. Poplar St.

Dear Terry McCalpin:

The purpose of this letter is to provide the City of Leonard with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on City of Leonard right-of-way properties and surrounding properties; and, remediation consisted of removal of soil from various locations on city property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on city properties surrounding 905 N. Poplar St. was up to 48 inches below the ground surface. City properties were then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those.

In areas on city properties and surrounding properties where contaminated soil remains at final excavation depth an orange geotextile liner was placed as a contamination notification for possible future excavation activities. Additionally, the EPA allowed the installation of the orange geotextile liner in some areas prior to receiving analytical results when maximum excavation depth was achieved and failure to backfill would delay project completion (in these areas the City of Leonard can disregard the use of the orange geotextile liner warning). See the attached analytical summary tables and maps for sampling results for city properties, as well as locations of where the orange geotextile liner was applied to city properties.

Please save this document, if the City of Leonard sells, transfers, or refinances a property the city will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on city properties.

The EPA thanks the City of Leonard for patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If there are any questions concerning the work conducted on city property, please contact me at 214-665-6609.

Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

Attachments:

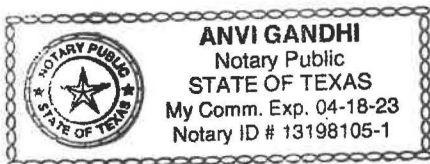
Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas

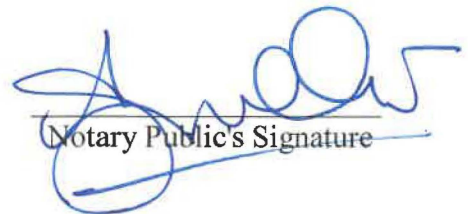
County of COLLIN

Before me, ANVI GANDHI on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of AFFIRMATION or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

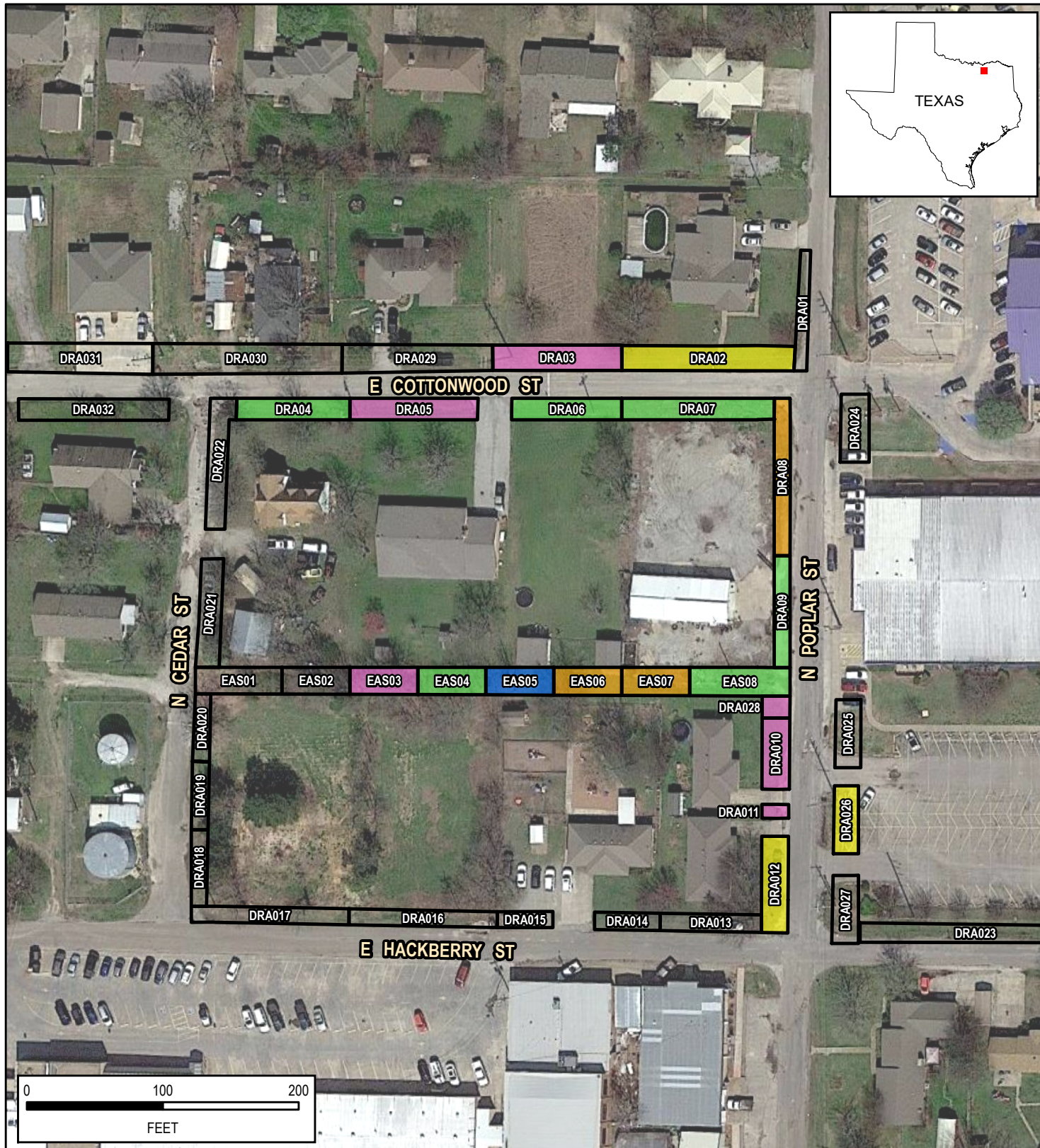
Given under my hand and seal of office this 19<sup>th</sup> day of June, (year). 2019.



(Personalized Seal)

  
Notary Public's Signature





# LEGEND

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Total PCB Results  $\geq 0.3$  to  $< 1$  mg/kg
- PCB Contamination  $\geq 1$  mg/kg
- PCB+Metals Contamination
- PCB+Metals+SVOCs Contamination
- Total PCBs Results  $\geq 50$  mg/kg

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



**USEPA REGION 6**

**CITY OF LEONARD**  
**ASSESSMENT MAP**  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN



Assessment Table  
Soil Analytical Data  
Assessment Sample Results - City of Leonard  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA01	DRA01-20180501-01-51	0"-1"	5/1/2018	FS		0.03 JQK		8.78	5.4	43	10.2	626		0.03 JQ	0.05 JQ	0.06 JQ	0.02 U	0.05 JQ
DRA01	DRA01-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		12.4	6.84	32.5	10.7	1050		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA01	DRA01-20180501-12-51	6"-12"	5/1/2018	FS		0.00691 U		12.3	18.6	16.5	27.7	2300		0.00919 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA02	DRA02-20180501-01-51	0"-1"	5/1/2018	FS		0.71 JK		18.1	9.54	113	29.9	1260		0.02 JQ	0.04 JQ	0.06 JQ	0.02 U	0.05 JQ
DRA02	DRA02-20180501-06-51	0"-6"	5/1/2018	FS		0.75		21.4	12.7	75.3	34.9	1740		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA02	DRA02-20180501-12-51	6"-12"	5/1/2018	FS		0.83 JK		19.9	11.3	59.8	30.2	1540		0.03 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA03	DRA03-20180501-01-51	0"-1"	5/1/2018	FS		1.41 JK		11.2	6.53	94.9	19.4	949		0.03 JQ	0.04 JQ	0.07 JQ	0.02 U	0.05 JQ
DRA03	DRA03-20180501-06-51	0"-6"	5/1/2018	FS		1.84		12.4	10.6	60.3	23.2	1370		0.02 JQ	0.01 U	0.03 JQ	0.02 U	0.01 U
DRA03	DRA03-20180501-12-51	6"-12"	5/1/2018	FS		1.01 JK		15.4	10.5	17.1	33.9	1390		0.00864 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA04	DRA04-20180501-01-51	0"-1"	5/1/2018	FS		1.32		20.6	6.56	2000	153	789		0.06 JQ	0.05 JQ	0.12 JQ	0.02 U	0.1 JQ
DRA04	DRA04-20180501-06-51	0"-6"	5/1/2018	FS		0.86		10.9	5.04	3010	228	636		0.05 JQ	0.01 U	0.08 JQ	0.02 U	0.01 U
DRA04	DRA04-20180501-12-51	6"-12"	5/1/2018	FS		0.11 JL		5.03	6.34	45.4	35.5	1110		0.00884 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA05	DRA05-20180501-01-51	0"-1"	5/1/2018	FS		1.26		17.6	5.4	2570	164	732		0.04 JQ	0.06 JQ	0.1 JQ	0.02 U	0.08 JQ
DRA05	DRA05-20180501-06-51	0"-6"	5/1/2018	FS		2.95 JH		12.4	5.35	1700	135	672		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA05	DRA05-20180501-12-51	6"-12"	5/1/2018	FS		0.09 JK		10.9	3.06	128	16.6	958		0.00912 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA06	DRA06-20180502-01-51	0"-1"	5/2/2018	FS		4.58 JK		59.1	5.99	3840	197	701		0.05 JQ	0.09 JQ	0.2 JQ	0.02 U	0.07 JQ
DRA06	DRA06-20180502-06-51	0"-6"	5/2/2018	FS		31.7		23.7	9.72	518	61.8	1400		0.00885 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA06	DRA06-20180502-12-51	6"-12"	5/2/2018	FS		9.65		21.9	8.41	173	36	946		0.00891 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA07	DRA07-20180502-01-51	0"-1"	5/2/2018	FS		2.88 JL		40.1	4.88	2150	92.5	584		0.08 U	0.11 U	0.15 U	0.21 U	0.16 U
DRA07	DRA07-20180502-06-51	0"-6"	5/2/2018	FS		12.7		15.6	7.59	2860	142	879		0.03 JQ	0.04 JQ	0.01 U	0.02 U	0.05 JQ
DRA07	DRA07-20180502-24-51	12"-24"	5/2/2018	FS		0.04 JQK		2.88 JK	3.52 JK	41.6	5.05 JK	910 JK		0.00942 UJL	0.01 UJL	0.01 UJL	0.02 UJL	0.01 UJL
DRA07	DRA07-20180502-24-52	12"-24"	5/2/2018	FD		0.05 JK		6.05 JK	15.2 JK	42.1 JK	18.8 JK	2270 JK		0.009 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA07	DRA07-20180502-12-51	6"-12"	5/2/2018	FS		0.07 JK		10.1	14.7	121	21	2520		0.00956 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA08	DRA08-20180502-01-51	0"-1"	5/2/2018	FS		96.5		42.7	6.88	4230	129	918 JK		0.09 U	0.13 U	0.17 U	0.24 U	0.18 U
DRA08	DRA08-20180502-06-51	0"-6"	5/2/2018	FS		2.4 JL		21.1	5.36	3980	139	604		0.09 JQL	0.13 JQL	0.01 UJL	0.03 JQL	0.16 JQL
DRA08	DRA08-20180502-24-51	12"-24"	5/2/2018	FS		0.00739 U		8.25	16	84.7	23.3	2200 JK		0.00964 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA08	DRA08-20180502-12-51	6"-12"	5/2/2018	FS		0.00762 U		4.88 JK	11.4	111	22.1	1330		0.00993 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA08	DRA08-20180502-12-52	6"-12"	5/2/2018	FD		0.02 JQK		8.89 JK	10.4	123	21.9	1200		0.00878 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA09	DRA09-20180502-01-51	0"-1"	5/2/2018	FS		2.05		8.45	3.58 JQ	5270	52.2	474 JK		0.07 U	0.1 U	0.13 U	0.18 U	0.14 U
DRA09	DRA09-20180502-06-51	0"-6"	5/2/2018	FS		3.06 JL		8.6	5.83	1560	163	588		0.05 JQ	0.07 JQ	0.09 JQ	0.02 U	0.05 JQ



**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - City of Leonard**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA09	DRA09-20180502-24-51	12"-24"	5/2/2018	FS		0.09 JK		4.65	10.1	77	20.4	1070		0.00832 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA09	DRA09-20180502-12-51	6"-12"	5/2/2018	FS		42.6		5.68	11.5	98.5	24.6	1660 JK		0.00831 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA10	DRA10-20180501-01-51	0"-1"	5/1/2018	FS		4.96		9.58	16.2	189	43.7	1550		0.00854 U	0.26 JQ	0.01 U	0.02 U	0.24 JQ
DRA10	DRA10-20180501-06-51	0"-6"	5/1/2018	FS		6.72		11	17.5	186	53.7	1430		0.05 JQ	0.07 JQ	0.12 JQ	0.02 U	0.08 JQ
DRA10	DRA10-20180501-12-51	6"-12"	5/1/2018	FS		0.61 JH		5.79	12.9	79.2	35.1	1280		0.03 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA11	DRA11-20180501-01-51	0"-1"	5/1/2018	FS		1.37 JK		11	11.7	146	36.1	1040		0.25 JQ	0.4 JQ	0.6	0.08 JQ	0.37 JQ
DRA11	DRA11-20180501-01-52	0"-1"	5/1/2018	FD		0.63 JK		11.5	12.8	134	36.4	1020		0.28 JQ	0.45	0.65	0.11 JQ	0.48
DRA11	DRA11-20180501-06-51	0"-6"	5/1/2018	FS		4.9 JH		19.3	16.2	122	42.9	1440		0.23 JQ	0.38 JQ	0.54	0.03 JQ	0.39 JQ
DRA11	DRA11-20180501-12-51	6"-12"	5/1/2018	FS		0.21		8.23	18.5	31.4	30.8	1760		0.03 JQ	0.01 U	0.06 JQ	0.02 U	0.01 U
DRA12	DRA12-20180501-01-51	0"-1"	5/1/2018	FS		0.75		6.78	9.92	80	37.4	1010		0.25 JQ	0.43	0.73	0.04 JQ	0.43
DRA12	DRA12-20180501-06-51	0"-6"	5/1/2018	FS		0.28 JH		7.52	11.4	62.4	36.3	1100		0.08 JQ	0.12 JQ	0.17 JQ	0.03 JQ	0.12 JQ
DRA12	DRA12-20180501-06-52	0"-6"	5/1/2018	FD		0.33 JH		6.97	10.2	77.7	38.7	965		0.27 JQ	0.26 JQ	0.3 JQ	0.04 JQ	0.2 JQ
DRA12	DRA12-20180501-12-51	6"-12"	5/1/2018	FS		0.32 JH		8.45	10.5	54	33.5	983		0.04 JQ	0.05 JQ	0.08 JQ	0.02 U	0.07 JQ
DRA13	DRA13-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		6.44	14.3	25.9	54	1390		0.05 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA13	DRA13-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		5.13	11.6	25.9	66.3	1160		0.09 JQ	0.11 JQ	0.13 JQ	0.02 JQ	0.1 JQ
DRA13	DRA13-20180501-12-51	6"-12"	5/1/2018	FS		0.00679 U		5.37	16	24.9	70.6	1870		0.02 JQ	0.01 U	0.03 JQ	0.02 U	0.01 U
DRA14	DRA14-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		5.18	13.1	21	46.9	2110		0.04 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA14	DRA14-20180501-06-51	0"-6"	5/1/2018	FS		0.0068 U		6.44	9.99	25	58.1	1190		0.04 JQ	0.06 JQ	0.09 JQ	0.02 U	0.05 JQ
DRA14	DRA14-20180501-12-51	6"-12"	5/1/2018	FS		0.00681 U		5.36	9.34	14	63	909		0.02 JQ	0.02 JQ	0.01 U	0.02 U	0.02 JQ
DRA15	DRA15-20180502-06-51	0"-6"	5/2/2018	FS		0.00654 U		6.84	16.5	17.1	63.1	1220		0.02 JQ	0.02 JQ	0.01 JQ	0.02 U	0.02 JQ
DRA15	DRA15-20180502-12-51	6"-12"	5/2/2018	FS		0.00703 U		5.34	14.2	12.7	36.3	1400		0.05 JQ	0.04 JQ	0.06 JQ	0.02 U	0.04 JQ
DRA16	DRA16-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		5.27	6.89	20.6	47.2	895		0.19 JQ	0.22 JQ	0.3 JQ	0.04 JQ	0.18 JQ
DRA16	DRA16-20180501-06-51	0"-6"	5/1/2018	FS		0.00684 U		7.93	9.68	17.7	65.7	1270		0.05 JQ	0.07 JQ	0.08 JQ	0.02 U	0.06 JQ
DRA16	DRA16-20180501-12-51	6"-12"	5/1/2018	FS		0.00675 U		6.12	12.6	22.2	37.8	1220		0.03 JQ	0.02 JQ	0.03 JQ	0.02 U	0.02 JQ
DRA17	DRA17-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		4.4	5.26	19.6	47.8	745		0.17 JQ	0.23 JQ	0.33 JQ	0.05 JQ	0.21 JQ
DRA17	DRA17-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		4.84	5.69	15.5	44.8	825		0.23 JQ	0.26 JQ	0.47	0.06 JQ	0.23 JQ
DRA17	DRA17-20180501-12-51	6"-12"	5/1/2018	FS		0.00667 U		6.89	8.07	9.47	22.3	1080		0.08 JQ	0.1 JQ	0.13 JQ	0.02 JQ	0.1 JQ
DRA17	DRA17-20180501-12-52	6"-12"	5/1/2018	FD		0.00672 U		3.9 JK	8.55	12.5	30.1	1180		0.02 JQ	0.02 JQ	0.01 U	0.02 U	0.02 JQ
DRA18	DRA18-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		4.52	4.82	19.8	66.1	757		0.25 JQ	0.3 JQ	0.42	0.07 JQ	0.3 JQ
DRA18	DRA18-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		4.16	4.38	15.9	53.9	881		0.21 JQ	0.26 JQ	0.36 JQ	0.06 JQ	0.25 JQ



**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - City of Leonard**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA19	DRA19-20180501-01-51	0"-1"	5/1/2018	FS		0.12 JQH		4.28	3.36	18.4	50.9	633		0.13 JQ	0.16 JQ	0.24 JQ	0.03 JQ	0.14 JQ
DRA19	DRA19-20180501-06-51	0"-6"	5/1/2018	FS		0.09 JQ		6.41	4.29	23.1	66.7	785		0.06 JQ	0.08 JQ	0.1 JQ	0.02 JQ	0.06 JQ
DRA19	DRA19-20180501-06-52	0"-6"	5/1/2018	FD		0.03 U		5.1	4.5	20.8	72.1	916		0.11 JQ	0.13 JQ	0.2 JQ	0.03 JQ	0.11 JQ
DRA19	DRA19-20180501-12-51	6"-12"	5/1/2018	FS		0.03 U		6.67	3.94	18.7	50.6	772		0.06 JQ	0.07 JQ	0.1 JQ	0.02 U	0.06 JQ
DRA20	DRA20-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		6.24	3.64	17.7	47.9	657		0.06 JQ	0.07 JQ	0.1 JQ	0.02 U	0.05 JQ
DRA20	DRA20-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		10.8	3.92	11.6	44.8	766		0.04 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA20	DRA20-20180501-12-51	6"-12"	5/1/2018	FS		0.03 U		10.6	5.95	7.86	33.9	965		0.00901 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA21	DRA21-20180501-01-51	0"-1"	5/1/2018	FS		0.04 U		3.9	5.1	20.3	65.7	864		0.04 JQ	0.01 U	0.06 JQ	0.02 U	0.04 JQ
DRA21	DRA21-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		4.73	6.11	21.2	67.9	932		0.02 JQ	0.01 U	0.03 JQ	0.02 U	0.02 JQ
DRA21	DRA21-20180501-12-51	6"-12"	5/1/2018	FS		0.00666 U		5.21	6.05	27.5	48.3	1180		0.04 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA22	DRA22-20180501-01-51	0"-1"	5/1/2018	FS		0.18 JQ		4.01	4.22	18.6	60.7	691		0.05 JQ	0.01 U	0.12 JQ	0.02 U	0.06 JQ
DRA22	DRA22-20180501-06-51	0"-6"	5/1/2018	FS		0.24 JH		4.85	5.48	26.9	99.9	814		0.03 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA22	DRA22-20180501-12-51	6"-12"	5/1/2018	FS		0.26 JH		4.72	5.25	15.4	109	938		0.03 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA23	DRA23-20180502-01-51	0"-1"	5/2/2018	FS		0.03 U		6.17	7.88	34.9	26.5	595		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA23	DRA23-20180502-06-51	0"-6"	5/2/2018	FS		0.0071 U		10.6	17.4	39.9	54	1050		0.09 JQ	0.13 JQ	0.21 JQ	0.03 JQ	0.11 JQ
DRA23	DRA23-20180502-12-51	6"-12"	5/2/2018	FS		0.00742 U		6.74	13.6 JK	33.9 JK	24.8	1130 JK		1.23 JQ	1.57 JQ	1.61 JQ	0.46 JQ	1.35 JQ
DRA23	DRA23-20180502-12-52	6"-12"	5/2/2018	FD		0.00743 U		7.99	35.3 JK	19.6 JK	23.7	3580 JK		0.09 U	0.13 U	0.17 U	0.24 U	0.18 U
DRA24	DRA24-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		3.96	5.71	32.7	14.9	553		0.03 JQ	0.04 JQ	0.06 JQ	0.02 U	0.05 JQ
DRA24	DRA24-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		3.32	4.58	27.5	12.5	505		0.02 JQ	0.03 JQ	0.04 JQ	0.02 U	0.03 JQ
DRA24	DRA24-20180501-12-51	6"-12"	5/1/2018	FS		0.03 U		3.55	5.95	25.4	20	269		0.02 JQ	0.03 JQ	0.04 JQ	0.02 U	0.03 JQ
DRA25	DRA25-20180502-01-51	0"-1"	5/2/2018	FS		0.02 U		2.03	2.15	20.5	3.71	193 JK		0.22 JQ	0.17 JQ	0.13 U	0.19 U	0.19 JQ
DRA25	DRA25-20180502-06-51	0"-6"	5/2/2018	FS		0.03 U		1.88	1.19	13.2	4.89	129 JK		0.29 JQ	0.33 JQ	0.14 U	0.19 U	0.2 JQ
DRA26	DRA26-20180502-01-51	0"-1"	5/2/2018	FS		0.33 JK		4.45	5.06	64.2	19	439		4.89	7.28	12	1.23 JQ	4.67
DRA26	DRA26-20180502-06-51	0"-6"	5/2/2018	FS		0.03 U		4.05	5.01	46	17.1	534		2.85 JQ	4.06 JK	5.68 JK	1.11 JQH	5.19 JH
DRA26	DRA26-20180502-12-51	6"-12"	5/2/2018	FS		0.27 JK		7.43	8.53	283	29.2	1030		0.09 U	0.12 U	0.16 U	0.22 U	0.17 U
DRA27	DRA27-20180502-01-51	0"-1"	5/2/2018	FS		0.02 U		4.2	5.64	50.1	21.1	494		2.47	2.75	3.49	0.45 JQ	1.19 JQ
DRA27	DRA27-20180502-06-51	0"-6"	5/2/2018	FS		0.03 U		4.63	6.69	70.4	30.4	714		2	2.69	4.36	0.85 JQ	2.39
DRA27	DRA27-20180502-12-51	6"-12"	5/2/2018	FS		0.03 U		5.57	9.23	29.3	24.4	839		0.66 JQ	0.99 JQ	1.54 JQ	0.24 JQ	0.91 JQ
DRA28	DRA28-20180502-01-51	0"-1"	5/2/2018	FS		38.7		6.93	10.9	1120	82.4	1130 JK		0.15 JQ	0.21 JQ	0.4	0.06 JQ	0.23 JQ
DRA28	DRA28-20180502-06-51	0"-6"	5/2/2018	FS		4.53		7.77	14.7	295	57.6	1340		0.06 JQ	0.11 JQ	0.2 JQ	0.02 JQ	0.1 JQ





**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - City of Leonard**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA28	DRA28-20180502-24-51	12"-24"	5/2/2018	FS		2.35		8.54	17.9	64.5	42.5	1600 JK		0.17 JQ	0.12 U	0.15 U	0.21 U	0.16 U
DRA28	DRA28-20180502-12-51	6"-12"	5/2/2018	FS		3.02		6.91	12.9	40.9	45	1400 JK		0.02 JQ	0.02 JQ	0.01 U	0.02 U	0.02 JQ
DRA29	DRA29-20181004-01-51	0"-1"	10/4/2018	FS		0 UND		9.25	8.04	31.7	28.5	1270		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA29	DRA29-20181004-06-51	0"-6"	10/4/2018	FS		0 UND		11.2	8.8	30.7	26.1	1500		0.0075	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA29	DRA29-20181004-06-52	0"-6"	10/4/2018	FD		0 UND		11	9.12	28.6	25.2	1500		0.0052	0.008	0.0057	0.039	0.04
DRA29	DRA29-20181004-12-51	6"-12"	10/4/2018	FS		0 UND		12.1	10	15.5	68.7	1590		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA30	DRA30-20181004-01-51	0"-1"	10/4/2018	FS		0 UND		11.5	6.56	19.7	32.4	1070		0.0034 J	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA30	DRA30-20181004-06-51	0"-6"	10/4/2018	FS		0 UND		53.6	6.35	16.6	60.1	1160		0.0041	0.011	0.0099	0.017	0.02
DRA30	DRA30-20181004-12-51	6"-12"	10/4/2018	FS		0 UND		33.9	7.12	13.4	31.6	1270		0.0033 J	0.003 J	0.0043	0.018	0.016
DRA31	DRA31-20181004-01-51	0"-1"	10/4/2018	FS		0 UND		3.34	4.15	8.81	9.57	372		0.0038 J	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA31	DRA31-20181004-06-51	0"-6"	10/4/2018	FS		0 UND		7.83	6.41	17.5	24.4	755		0.0026 J	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA31	DRA31-20181004-12-51	6"-12"	10/4/2018	FS		0 UND		5.07	7.34	14.1	20.1	711		0.0091	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA32	DRA32-20181004-01-51	0"-1"	10/4/2018	FS		0 UND		6.04	5.3	34.2	34.4	785		0.015	0.001 U	0.0021 J	0.0016 U	0.0008 U
DRA32	DRA32-20181004-06-51	0"-6"	10/4/2018	FS		0 UND		12.3	5.76	27.7	56.1	878		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA32	DRA32-20181004-06-52	0"-6"	10/4/2018	FD		0 UND		7.36	6.29	29.7	52.3	1070		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA32	DRA32-20181004-12-51	6"-12"	10/4/2018	FS		0 UND		7.82	5.64	11.2	119	858		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
EAS01	EAS01-20180501-01-51	0"-1"	5/1/2018	FS		0.00619 U		12.7	5.34	10.4	30.9	962		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS01	EAS01-20180501-06-51	0"-6"	5/1/2018	FS		0.00675 U		16.9	5.53	9.89	27.4	1070		0.00886 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS01	EAS01-20180501-12-51	6"-12"	5/1/2018	FS		0.00669 U		12.6	5.67	7.31	17.6	1090		0.00877 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS02	EAS02-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		8.66	5.25	20.9	44.2	1080		0.00937 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS02	EAS02-20180501-06-51	0"-6"	5/1/2018	FS		0.00678 U		7.4	5.29	12.6	27.4	1150		0.00883 UJK	0.01 U	0.01 U	0.02 U	0.01 U
EAS02	EAS02-20180501-12-51	6"-12"	5/1/2018	FS		0.00678 U		7.22	5.2	12.2	26.9	1020		0.02 JQ	0.01 U	0.05 JQ	0.02 U	0.01 U
EAS03	EAS03-20180501-01-51	0"-1"	5/1/2018	FS		1.32 JK		4.3	4.88	1400	75.4	1000		0.08 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS03	EAS03-20180501-06-51	0"-6"	5/1/2018	FS		2.18		8.8	8.8	225	108	1440		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS03	EAS03-20180501-12-51	6"-12"	5/1/2018	FS		0.22		6.52	7.04	29.7	42.8	1560		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS04	EAS04-20180501-01-51	0"-1"	5/1/2018	FS		4.22		4.91	6.68	2310	240	1240		0.04 JQ	0.01 U	0.07 JQ	0.02 U	0.01 U
EAS04	EAS04-20180501-06-51	0"-6"	5/1/2018	FS		1.97		5.34	7.18	438	78.4	1440		0.00895 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS04	EAS04-20180501-12-51	6"-12"	5/1/2018	FS		0.64 JH		7.7	11.5	243	35.7	2180		0.00864 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS05	EAS05-20180502-01-51	0"-1"	5/2/2018	FS		3.67 JK		7.29	7.3	275	47.1	1120		0.07 JQL	0.11 JQL	0.21 JQL	0.02 UJL	0.13 JQL
EAS05	EAS05-20180502-06-51	0"-6"	5/2/2018	FS		15.2		6.73	7.3	527	31.9	1300		9.8	13.3	16.5	2.97 JQ	15.2
EAS05	EAS05-20180502-12-51	6"-12"	5/2/2018	FS		2.22		6.15	12.3	46.2	21.5	1970		0.03 JQ	0.04 JQ	0.07 JQ	0.02 U	0.07 JQ



Assessment Table  
Soil Analytical Data  
Assessment Sample Results - City of Leonard  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
EAS06	EAS06-20180502-01-51	0"-1"	5/2/2018	FS		64.2		5.12	4.28	277	26.4	602 JK		0.09 JQ	0.16 JQ	0.33 JQ	0.05 JQ	0.2 JQ
EAS06	EAS06-20180502-06-51	0"-6"	5/2/2018	FS		30.3		7.92	7.73	736	30.4	913 JK		0.02 JQ	0.03 JQ	0.01 U	0.02 U	0.03 JQ
EAS06	EAS06-20180502-24-51	12"-24"	5/2/2018	FS		0.25		4.77	14.9	26	19.7	2040		0.00874 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS06	EAS06-20180502-12-51	6"-12"	5/2/2018	FS		4.9		10.5	13.8	2040	40.7	1910 JK		0.00869 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-01-51	0"-1"	5/3/2018	FS		95.1		8.69	10.3	1490	63.5	1430 JK		0.00833 U	0.02 JQ	0.01 U	0.02 U	0.02 JQ
EAS07	EAS07-20180503-06-51	0"-6"	5/3/2018	FS		32.6		9.93	5.14	884	37.6	692 JK		0.02 JQ	0.04 JQ	0.07 JQ	0.01 U	0.04 JQ
EAS07	EAS07-20180503-24-51	12"-24"	5/3/2018	FS		2.42		4.25	19.6	21.3	29.3	2970		0.00861 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-24-52	12"-24"	5/3/2018	FD		3.94		5.06	16.3	15.6	18.9	2040		0.00865 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-36-51	24"-36"	5/3/2018	FS		72.6		2.74	3.78	111	14.6	858		0.00902 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-12-51	6"-12"	5/3/2018	FS		1.33 JL		5.38	15	32.1	40.7	1480		0.00905 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-01-51	0"-1"	5/3/2018	FS		4.12 JL		6.42	3.16	393	16.9	557		0.06 JQ	0.12 JQ	0.19 JQ	0.03 JQ	0.11 JQ
EAS08	EAS08-20180503-06-51	0"-6"	5/3/2018	FS		8.51		6.94	6.67	420	21.6	1090		0.03 JQ	0.06 JQ	0.09 JQ	0.01 U	0.06 JQ
EAS08	EAS08-20180503-24-51	12"-24"	5/3/2018	FS		0.91 JK		9.96	14.6	62.5 JK	30	1550 JK		0.00927 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-24-52	12"-24"	5/3/2018	FD		3.25 JK		4.76	17.3	25.6 JK	23.6	1840 JK		0.00867 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-36-51	24"-36"	5/3/2018	FS		0.08 JL		5.98	16.3	29.2	21.3	2070		0.00891 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-12-51	6"-12"	5/3/2018	FS		0.58 JL		12.6	15.5	62.8	28.2	1930		0.00885 U	0.01 U	0.01 U	0.02 U	0.01 U

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

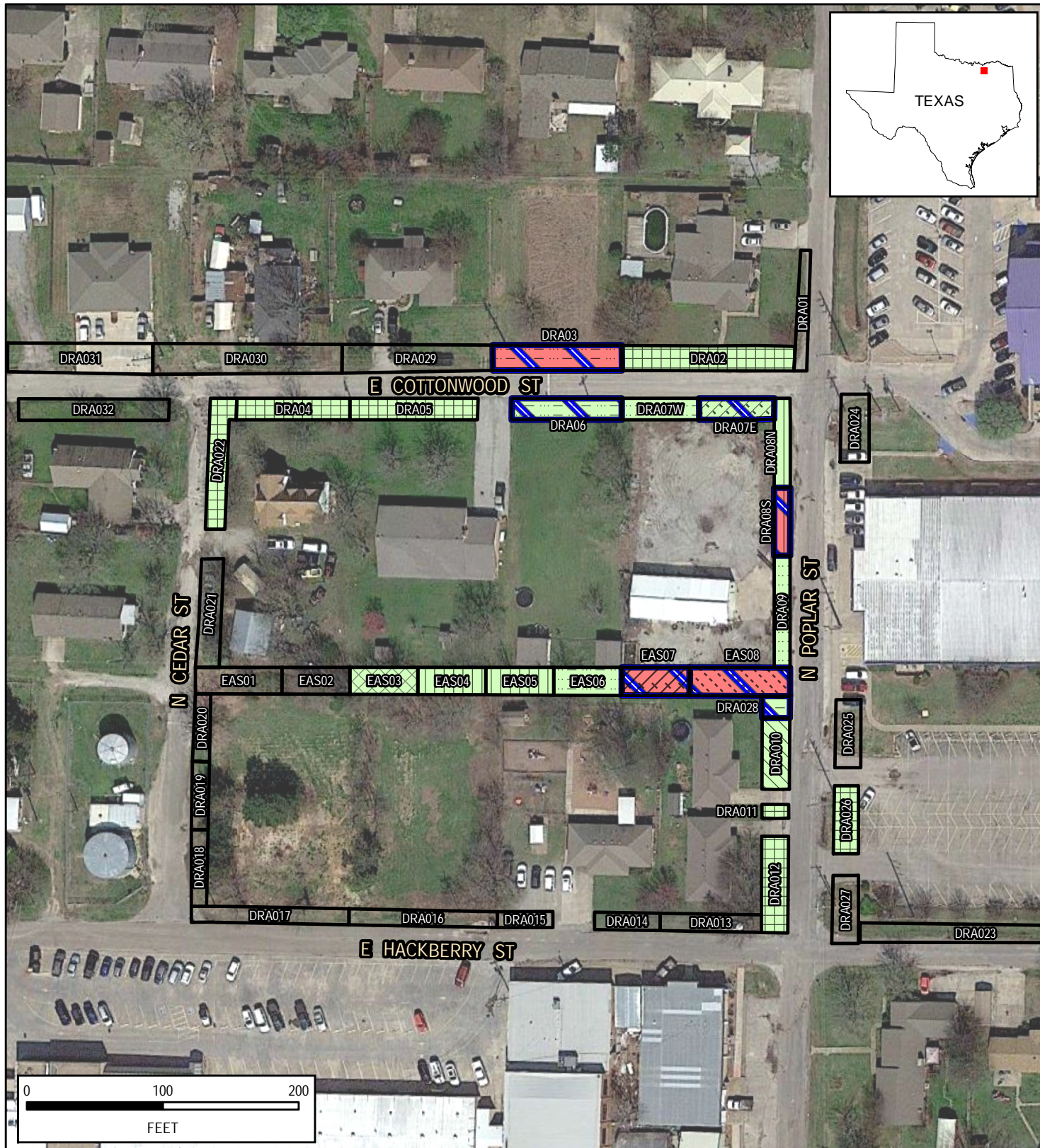
U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**







# LEGEND

Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)

Sample Less Than EPA Action Level (See Table)

Sample Exceeds EPA Action Level (See Table)

Geotextile Liner Installed

Excavation Depth (Inches BGS)

0"

6"

12"

16"

18"

24"

36"

46"

48"



USEPA REGION 6

CITY OF LEONARD  
EXCAVATION MAP

FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

BGS - Below Ground Surface



Removal Table  
Soil Analytical Data  
Soil Confirmation Samples - City of Leonard  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA02	DRA02-20190109-12-56	12"-12"	1/9/2019	FS		0.038		8.73	12.7	23	25.4	1660		0.0022 JQ	0.0022 JQ	0.0025 JQ	0.0016 U	0.0019 JQ
DRA03	DRA03-20190115-24-56	24"-24"	1/15/2019	FS		4.3		5.37	9.96	10.9	12.9	1410		0.0016 U	0.001 U	0.0072	0.0016 U	0.0008 U
DRA04	DRA04-20190201-12-56	12"-12"	2/1/2019	FS		0.1		3.42	4.54	13.5	6.49	932		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA05	DRA05-20190201-12-56	12"-12"	2/1/2019	FS		0.041		18.8	9.01	125	61.4	1570		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA06	DRA06-20181205-24-56	24"-24"	12/5/2018	FS		0.067		7.69	7.91	18.7	7.79	1110		0.049	0.06	0.078	0.011	0.053
DRA07E	DRA07E-20190213-48-56	48"-48"	2/13/2019	FS		0.0772		5.93	6.27	8.95	7.81	1100		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA07E	DRA07E-20190213-48-57	48"-48"	2/13/2019	FD		0.079		5.01	5.24	6.85	5.46	1160		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA07W	DRA07W-20190201-24-56	24"-24"	2/1/2019	FS		0.045		3.46	4.25	10.7	5.86	1300		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA09	DRA09-20190117-24-56	24"-24"	1/17/2019	FS		0.045		5.94	11.7	22.5	19	835		0.0016 U	0.0019 JQ	0.0022 JQ	0.0016 U	0.0008 U
DRA10	DRA010-20181203-16-56	16"-16"	12/3/2018	FS		0.8		9.48	13.3 JL	97.2	35.5	1240		0.033	0.046	0.094	0.013	0.06
DRA11	DRA011-20181203-12-56	12"-12"	12/3/2018	FS		0.58		18.9	12.5 JL	193	36.1	1190		0.13	0.18	0.39	0.037	0.19
DRA12	DRA012-20181204-12-56	12"-12"	12/4/2018	FS		0 U		7.01	12.2	35.4 B	33.8	1180		0.056	0.057	0.091	0.0094	0.041
DRA22	DRA022-20190114-12-56	12"-12"	1/14/2019	FS		0.033		4.91	6.85	10.9	55.7	1220		0.0032 JQ	0.0043 JQ	0.0051	0.0016 U	0.0032 JQ
DRA26	DRA26-20190107-12-56	12"-12"	1/7/2019	FS		0.029		7.15	8.96	46.8	28.6	950		0.12	0.19	0.3	0.035	0.18
DRA28	DRA028-20181217-24-56	24"-24"	12/17/2018	FS		0.039		6.69	12.9	35.5	25.8 JH	1280 JK		0.0075	0.0062	0.0099 JH	0.0024 JQ	0.0056
EAS03	EAS03-20181115-06-56	6"-6"	11/15/2018	FS		0.047		8.62	7.45	68.7	64.2	1290		0.0055	0.0055	0.0088	0.0077	0.0085
EAS04	EAS04-20181130-18-56	18"-18"	11/30/2018	FS		0.079		7.52	7.3 JL	19.3	10.9 JL	1190		0.0031 JQ	0.002 JQ	0.0033 JQ	0.0016 U	0.0019 JQ
EAS05	EAS05-20181203-18-56	18"-18"	12/3/2018	FS		0.051		5.89	7.07 JL	16.8	12.9	1080		0.0048	0.0033 JQ	0.0058	0.0016 U	0.0018 JQ
EAS06	EAS06-20181217-24-56	24"-24"	12/17/2018	FS		0.0089		4.84	7.03	11.3	13.2 JH	434 JK		0.0016 U	0.001 U	0.0019 JQK	0.0016 U	0.0008 U
EAS06	EAS06-20181217-24-57	24"-24"	12/17/2018	FD		0.045		4.61	7.39	12.9	12.7 JH	1510 JK		0.011	0.0057	0.017 JK	0.0022 JQ	0.0066
EAS07	EAS07-20190115-36-56	36"-36"	1/15/2019	FS		4.8		5.09	9.33	24.8	17.7	1140		0.0044	0.0039 JQ	0.0057	0.0016 U	0.0025 JQ
EAS08	EAS08-20190114-46-56	46"-46"	1/14/2019	FS		25		8.72	17.6	257	28.9	2330		0.014	0.037	0.067	0.0092	0.04

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

(b) (6)

Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification # FJD02  
Soil Removal Action at 905 N. Poplar St.

Dear (b) (6) Owners of (b) (6) Leonard, TX 75452.  
Property legal description: COLLEGE ADDN, (b) (6)

The purpose of this letter is to provide you with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on your property and surrounding properties; and, remediation consisted of removal of soil from various locations on your property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on your property at (b) (6) was up to 24 inches below the ground surface. Your property was then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those. See the attached analytical summary table and map for sampling results for your property and surrounding City of Leonard right-of-way properties.

Please save this document for your permanent records. If you sell, transfer, or refinance the property you will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on your property.

The EPA thanks you for your patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If you have any questions concerning the work conducted on your property, you can contact me at 214-665-6609.

Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

Attachments:

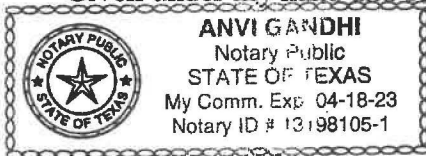
Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas

County of COLLIN

Before me, Anvi Gandhi on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of Affirmation or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

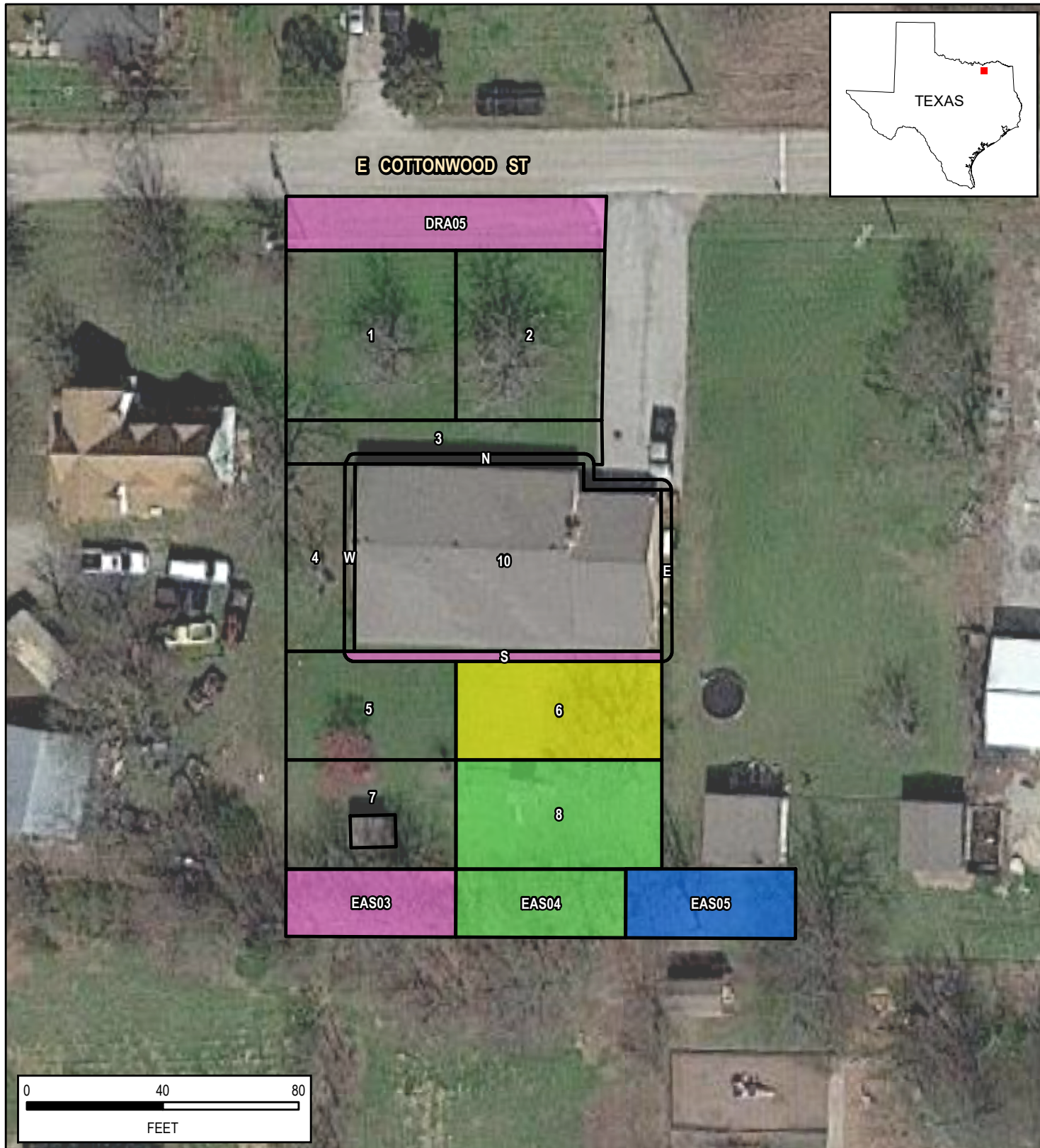
Given under my hand and seal of office this 19th day of June, (year) 2019



(Personalized Seal)

  
Notary Public's Signature





# **LEGEND**

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Total PCB Results  $\geq 0.3$  to  $< 1$  mg/kg
- PCB Contamination  $\geq 1$  mg/kg
- PCB+Metals Contamination
- PCB+Metals+SVOCs Contamination

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



**USEPA REGION 6**

**PROPERTY FJD02**

**(b) (6)**  
**ASSESSMENT MAP**  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE MAY 2019	PROJECT NO 20600.012.001.1175	SCALE AS SHOWN
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**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - (b) (6) - FJD02**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA05	DRA05-20180501-01-51	0"-1"	5/1/2018	FS		1.26		17.6	5.4	2570	164	732		0.04 JQ	0.06 JQ	0.1 JQ	0.02 U	0.08 JQ
DRA05	DRA05-20180501-06-51	0"-6"	5/1/2018	FS		2.95 JH		12.4	5.35	1700	135	672		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA05	DRA05-20180501-12-51	6"-12"	5/1/2018	FS		0.09 JK		10.9	3.06	128	16.6	958		0.00912 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS03	EAS03-20180501-01-51	0"-1"	5/1/2018	FS		1.32 JK		4.3	4.88	1400	75.4	1000		0.08 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS03	EAS03-20180501-06-51	0"-6"	5/1/2018	FS		2.18		8.8	8.8	225	108	1440		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS03	EAS03-20180501-12-51	6"-12"	5/1/2018	FS		0.22		6.52	7.04	29.7	42.8	1560		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS04	EAS04-20180501-01-51	0"-1"	5/1/2018	FS		4.22		4.91	6.68	2310	240	1240		0.04 JQ	0.01 U	0.07 JQ	0.02 U	0.01 U
EAS04	EAS04-20180501-06-51	0"-6"	5/1/2018	FS		1.97		5.34	7.18	438	78.4	1440		0.00895 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS04	EAS04-20180501-12-51	6"-12"	5/1/2018	FS		0.64 JH		7.7	11.5	243	35.7	2180		0.00864 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS05	EAS05-20180502-01-51	0"-1"	5/2/2018	FS		3.67 JK		7.29	7.3	275	47.1	1120		0.07 JQL	0.11 JQL	0.21 JQL	0.02 UJL	0.13 JQL
EAS05	EAS05-20180502-06-51	0"-6"	5/2/2018	FS		15.2		6.73	7.3	527	31.9	1300		9.8	13.3	16.5	2.97 JQ	15.2
EAS05	EAS05-20180502-12-51	6"-12"	5/2/2018	FS		2.22		6.15	12.3	46.2	21.5	1970		0.03 JQ	0.04 JQ	0.07 JQ	0.02 U	0.07 JQ
FJD02-01	FJD02-01-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		13.4	9.4	32.6	114	1230		0.01 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-01	FJD02-01-20180501-06-51	0"-6"	5/1/2018	FS		0.00679 U		31.8	10.6	18.2	106	1850		0.00885 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-01	FJD02-01-20180501-12-51	6"-12"	5/1/2018	FS		0.00705 U		7.57	14.2	15.6	44.3	2320		0.00918 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-02	FJD02-02-20180501-01-51	0"-1"	5/1/2018	FS		0.00655 U		12.3	6.56	36.3	31.9	1080		0.02 JQ	0.02 JQ	0.02 JQ	0.02 U	0.02 JQ
FJD02-02	FJD02-02-20180501-06-51	0"-6"	5/1/2018	FS		0.00688 U		17.7	13.9	27.7	33.4	2130		0.00884 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-02	FJD02-02-20180501-12-51	6"-12"	5/1/2018	FS		0.00679 U		7.47	15.8	15.7	25.5	2190		0.00885 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-03	FJD02-03-20180501-01-51	0"-1"	5/1/2018	FS		0.06		8.75	7.53	26.7	75.4	1260		0.00932 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-03	FJD02-03-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		11	9.66	28.2	122	1560		0.00922 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-03	FJD02-03-20180501-12-51	6"-12"	5/1/2018	FS		0.02 JQ		18.2	14	15.2	26.4	2100		0.00906 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-04	FJD02-04-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		9.48	7.8	59.5	79.6	1020		0.03 JQ	0.01 U	0.06 JQ	0.02 U	0.03 JQ
FJD02-04	FJD02-04-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		14.6	13.6	70.5	105	1540		0.00868 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-04	FJD02-04-20180501-12-51	6"-12"	5/1/2018	FS		0.00651 U		12.1	9.65	23.5	65.1	1550		0.00854 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-05	FJD02-05-20180501-01-51	0"-1"	5/1/2018	FS		0.06		18.9	7.36	121	40.5	1160		0.02 JQ	0.02 JQ	0.03 JQ	0.02 U	0.03 JQ
FJD02-05	FJD02-05-20180501-06-51	0"-6"	5/1/2018	FS		0.00665 U		16.9	10.1	78.6	27.2	1410		0.01 JQ	0.01 U	0.01 JQ	0.02 U	0.01 JQ
FJD02-05	FJD02-05-20180501-12-51	6"-12"	5/1/2018	FS		0.0071 U		4.61	8.04	15.7	11.4	1240		0.00913 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-06	FJD02-06-20180501-01-51	0"-1"	5/1/2018	FS		0.76 JK		17.2	6.41	33.3	91	977		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-06	FJD02-06-20180501-06-51	0"-6"	5/1/2018	FS		0.00662 U		15.7	9.31	603	61.6	1500		0.00869 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-06	FJD02-06-20180501-12-51	6"-12"	5/1/2018	FS		0.0067 U		9.54	10.5	451	13.9	1490		0.00867 U	0.01 U	0.01 U	0.02 U	0.01 U





Assessment Table  
Soil Analytical Data  
Assessment Sample Results - (b) (6) - FJD02  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
FJD02-07	FJD02-07-20180501-01-51	0"-1"	5/1/2018	FS		0.00639 U		10.3	5.35	168	53.5	817		0.12 JQ	0.11 JQ	0.16 JQ	0.02 JQ	0.1 JQ
FJD02-07	FJD02-07-20180501-06-51	0"-6"	5/1/2018	FS		0.19		19.7	8.63	101	72.4	1360		0.02 JQ	0.01 JQ	0.01 U	0.02 U	0.02 JQ
FJD02-07	FJD02-07-20180501-12-51	6"-12"	5/1/2018	FS		0.00686 U		9.94	5.97	10.6	17	1130		0.00888 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD02-08	FJD02-08-20180501-01-51	0"-1"	5/1/2018	FS		4.71		27.8	9.49	1190	158	1420		0.03 JQ	0.04 JQ	0.06 JQ	0.02 U	0.05 JQ
FJD02-08	FJD02-08-20180501-06-51	0"-6"	5/1/2018	FS		4.21 JK		18.7	8.36	6740 JK	402 JK	1480 JK		0.01 JQ	0.01 U	0.03 JQ	0.02 U	0.01 JQH
FJD02-08	FJD02-08-20180501-12-51	6"-12"	5/1/2018	FS		0.04 JK		40.9	7.73	45.7	18.3	1340		0.00841 U	0.01 U	0.01 U	0.02 U	0.01 JQ
FJD02-10E	FJD02-10-DLE-20180502-06-51	0"-6"	5/2/2018	FS		0.12 JK		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
FJD02-10N	FJD02-10-DLN-20180502-06-51	0"-6"	5/2/2018	FS		0.00748 U		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
FJD02-10S	FJD02-10-DLS-20180502-06-51	0"-6"	5/2/2018	FS		4.38		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
FJD02-10W	FJD02-10-DLW-20180502-06-51	0"-6"	5/2/2018	FS		0.02 JQK		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

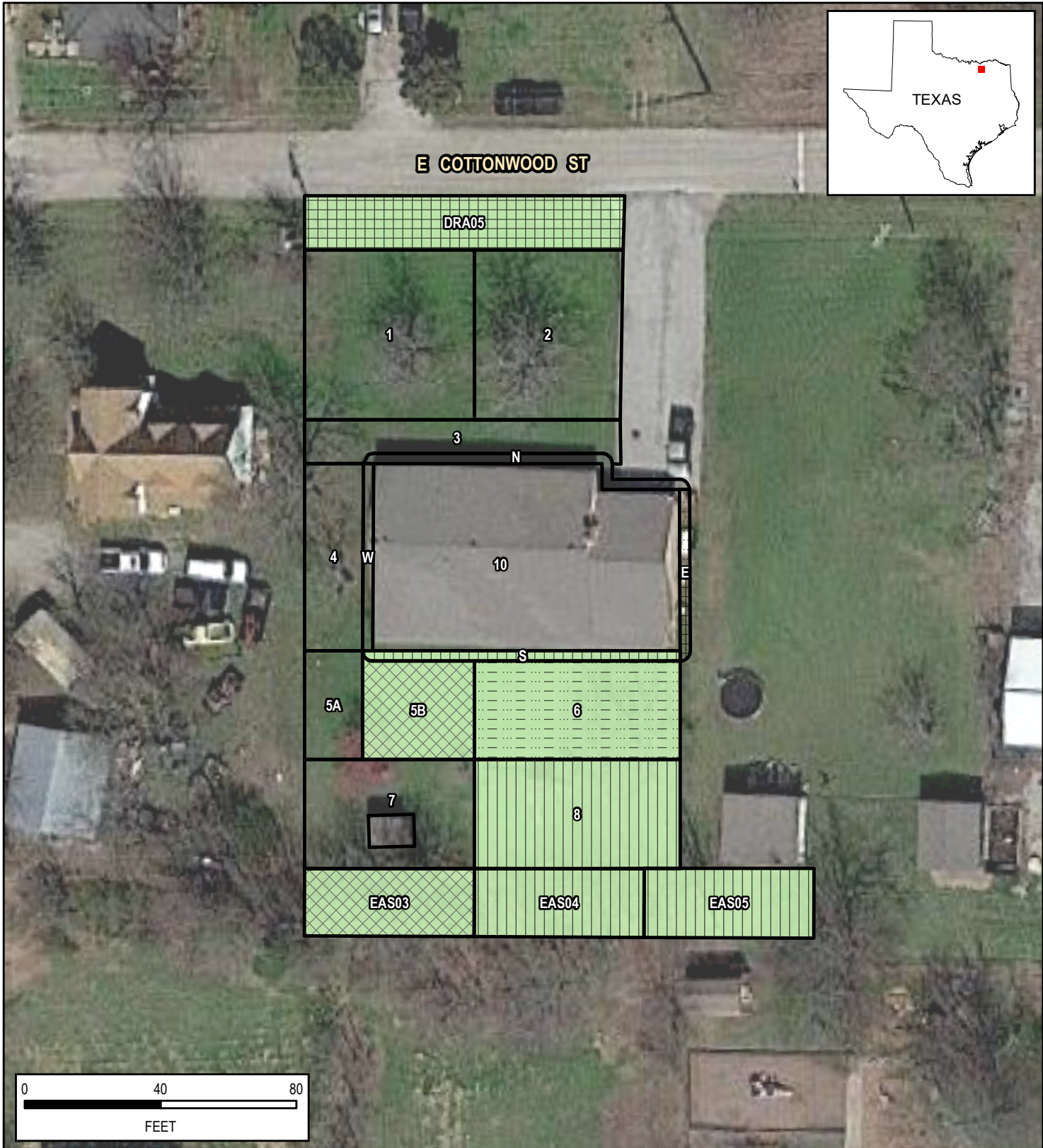
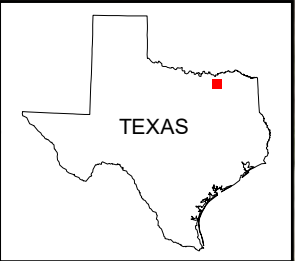
Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**





#### LEGEND

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Sample Less Than EPA Action Level (See Table)
- Sample Exceeds EPA Action Level (See Table)

#### Excavation Depth (Inches BGS)

- 0"
- 6"
- 12"
- 18"
- 24"



#### USEPA REGION 6

#### PROPERTY FJD02

**(b) (6)**  
EXCAVATION MAP  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE

JUNE 2019

PROJECT NO

20600.012.001.1175

SCALE

AS SHOWN

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

BGS - Below Ground Surface

Removal Table  
Soil Analytical Data  
Confirmation Sample Results - (b) (6) - FJD02  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA05	DRA05-20190201-12-56	12"-12"	2/1/2019	FS		0.041		18.8	9.01	125	61.4	1570		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
EAS03	EAS03-20181115-06-56	6"-6"	11/15/2018	FS		0.047		8.62	7.45	68.7	64.2	1290		0.0055	0.0055	0.0088	0.0077	0.0085
EAS04	EAS04-20181130-18-56	18"-18"	11/30/2018	FS		0.079		7.52	7.3 JL	19.3	10.9 JL	1190		0.0031 JQ	0.002 JQ	0.0033 JQ	0.0016 U	0.0019 JQ
EAS05	EAS05-20181203-18-56	18"-18"	12/3/2018	FS		0.051		5.89	7.07 JL	16.8	12.9	1080		0.0048	0.0033 JQ	0.0058	0.0016 U	0.0018 JQ
FJD02-05B	FJD02-05B-20181115-06-56	6"-6"	11/15/2018	FS		0 U		14.9	7.83	82.4	15.7	1100		0.0024 JQ	0.0023 JQ	0.0037 JQ	0.0016 U	0.0012 JQ
FJD02-06	FJD02-06-20181203-24-56	24"-24"	12/3/2018	FS		0 U		5.71	6.5 JL	7.4	7.41	718		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD02-08	FJD02-08-20181130-18-56	18"-18"	11/30/2018	FS		0 U		9.48	5.62 JL	12.5	6.88 JL	927		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD02-10S	FJD02-10S-20181128-18-56	18"-18"	11/28/2018	FS		0 U		9.31	12.2 JIL	24	15.8	1450		0.013	0.014	0.018	0.0041	0.015

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NP - Not Published  
mg/kg - milligrams per kilogram.  
" - Inches  
H - High bias  
J - The identification of the analyte is acceptable; the reported value is an estimate  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit  
U - Analyte not detected  
**Bold** - Value exceeds the detection limit for specific sample analyte  
**Highlighted value exceeds the Cleanup level for the specific sample analyte**







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

(b) (6)

Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification # FJD03  
Soil Removal Action at 905 N. Poplar St.

Dear (b) (6): Owner of (b) (6) Leonard, TX 75452.  
Property legal description: COLLEGE ADDN, (b) (6)

The purpose of this letter is to provide you with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on your property and surrounding properties; and, remediation consisted of removal of soil from various locations on your property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on your property at (b) (6) was up to 30 inches below the ground surface. Your property was then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those.

In areas on your property and surrounding properties where contaminated soil remains at final excavation depth an orange geotextile liner was placed as a contamination notification for possible future excavation activities. Additionally, the EPA allowed the installation of the orange geotextile liner in some areas prior to receiving analytical results when maximum excavation depth was achieved and failure to backfill would delay project completion (in these areas you can disregard the use of the orange geotextile liner warning). See the attached analytical summary table and map for sampling results for your property and surrounding City of Leonard right-of-way properties, as well as locations of where the orange geotextile liner was applied to your property.

Please save this document for your permanent records. If you sell, transfer, or refinance the property you will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on your property.

The EPA thanks you for your patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If you have any questions concerning the work conducted on your property, you can contact me at 214-665-6609.

Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

Attachments:

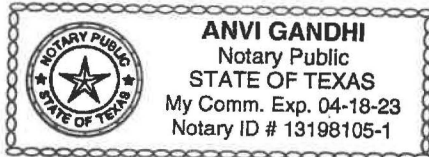
Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas

County of COLLIN

Before me, ANVI GANDHI on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of AFFIRMATION or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 19th day of JUNE, (year). 2019

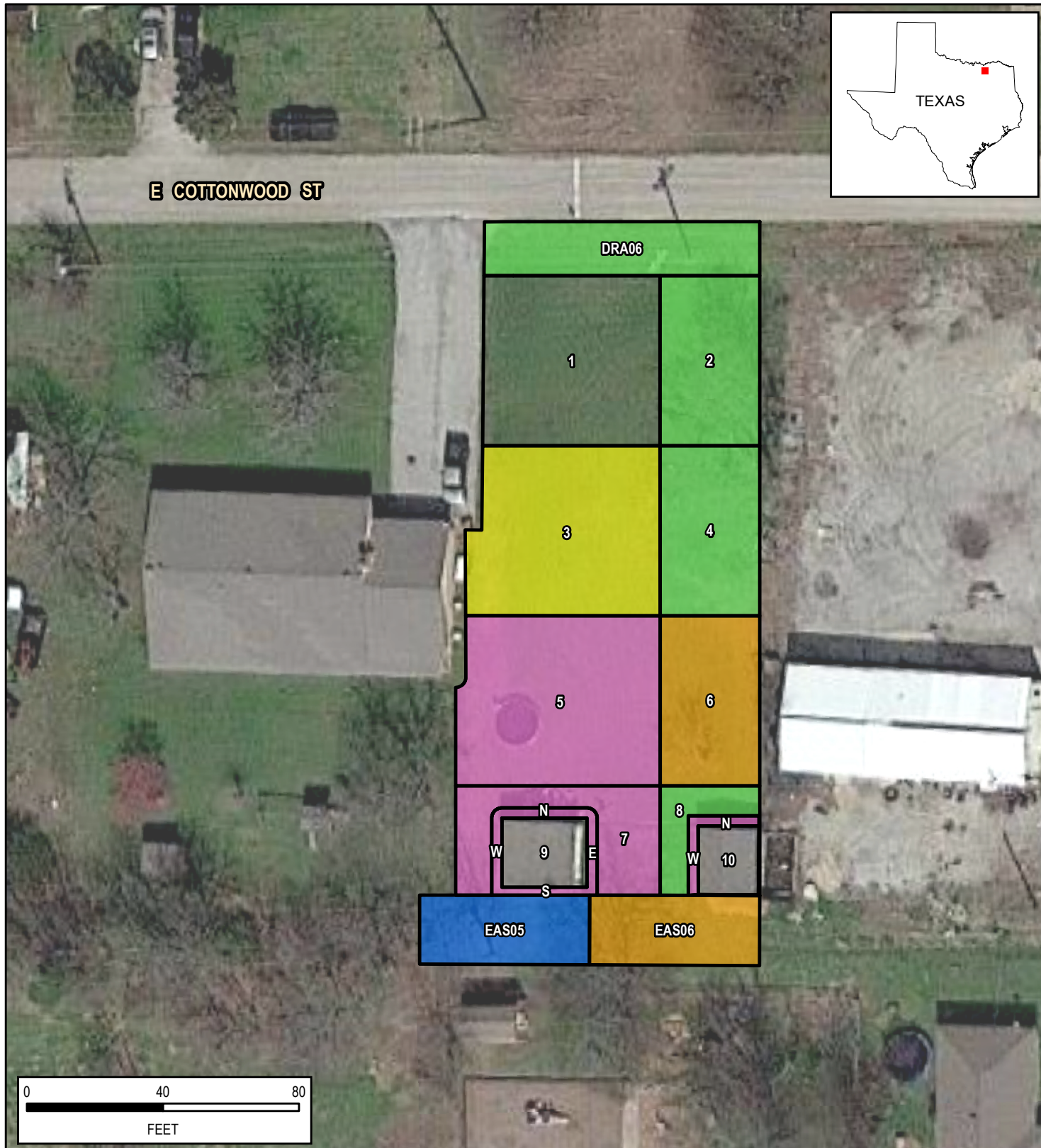


(Personalized Seal)



Notary Public's Signature





# **LEGEND**

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Total PCB Results  $\geq 0.3$  to  $< 1$  mg/kg
- PCB Contamination  $\geq 1$  mg/kg
- PCB+Metals Contamination
- PCB+Metals+SVOCs Contamination
- Total PCBs Results  $\geq 50$  mg/kg

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



**USEPA REGION 6**

**PROPERTY FJD03**

**(b) (6)**  
**ASSESSMENT MAP**  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - (b) (6) - FJD03**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA06	DRA06-20180502-01-51	0"-1"	5/2/2018	FS		4.58 JK		59.1	5.99	3840	197	701		0.05 JQ	0.09 JQ	0.2 JQ	0.02 U	0.07 JQ
DRA06	DRA06-20180502-06-51	0"-6"	5/2/2018	FS		31.7		23.7	9.72	518	61.8	1400		0.00885 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA06	DRA06-20180502-12-51	6"-12"	5/2/2018	FS		9.65		21.9	8.41	173	36	946		0.00891 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS05	EAS05-20180502-01-51	0"-1"	5/2/2018	FS		3.67 JK		7.29	7.3	275	47.1	1120		0.07 JQL	0.11 JQL	0.21 JQL	0.02 UJL	0.13 JQL
EAS05	EAS05-20180502-06-51	0"-6"	5/2/2018	FS		15.2		6.73	7.3	527	31.9	1300		9.8	13.3	16.5	2.97 JQ	15.2
EAS05	EAS05-20180502-12-51	6"-12"	5/2/2018	FS		2.22		6.15	12.3	46.2	21.5	1970		0.03 JQ	0.04 JQ	0.07 JQ	0.02 U	0.07 JQ
EAS06	EAS06-20180502-01-51	0"-1"	5/2/2018	FS		64.2		5.12	4.28	277	26.4	602 JK		0.09 JQ	0.16 JQ	0.33 JQ	0.05 JQ	0.2 JQ
EAS06	EAS06-20180502-06-51	0"-6"	5/2/2018	FS		30.3		7.92	7.73	736	30.4	913 JK		0.02 JQ	0.03 JQ	0.01 U	0.02 U	0.03 JQ
EAS06	EAS06-20180502-24-51	12"-24"	5/2/2018	FS		0.25		4.77	14.9	26	19.7	2040		0.00874 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS06	EAS06-20180502-12-51	6"-12"	5/2/2018	FS		4.9		10.5	13.8	2040	40.7	1910 JK		0.00869 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-01	FJD03-01-20180502-01-51	0"-1"	5/2/2018	FS		0.08 JL		14.7	12	90.2	34.4	1780		0.02 JQ	0.02 JQ	0.04 JQ	0.02 U	0.02 JQ
FJD03-01	FJD03-01-20180502-06-51	0"-6"	5/2/2018	FS		0.007 U		7.29	17.1	24	27.7	2400		0.00912 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-01	FJD03-01-20180502-12-51	6"-12"	5/2/2018	FS		0.00716 U		10.1	18.1	37.9	29.8	2460		0.00927 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-02	FJD03-02-20180501-01-51	0"-1"	5/1/2018	FS		7.15		11.3	8.09	256	31	1130		0.02 JQ	0.03 JQ	0.05 JQ	0.02 U	0.02 JQ
FJD03-02	FJD03-02-20180502-06-51	0"-6"	5/2/2018	FS		1.05 JL		15	13	93.5	34.6	1840		0.02 JQL	0.02 JQL	0.01 UJL	0.02 UJL	0.01 JQL
FJD03-02	FJD03-02-20180502-24-51	12"-24"	5/2/2018	FS		0.44 JK		5.1	21.1	17.7	20.4	3910 JK		0.00921 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-02	FJD03-02-20180502-12-51	6"-12"	5/2/2018	FS		0.09 JK		7.04	15.4	35.6	24.6	2030		0.01 UJL	0.02 UJL	0.03 UJL	0.04 UJL	0.03 UJL
FJD03-03	FJD03-03-20180502-01-51	0"-1"	5/2/2018	FS		0.34		15.4	9.41	2630	57.2	1400		0.00869 U	0.01 U	0.01 U	0.04 JQ	0.07 JQ
FJD03-03	FJD03-03-20180502-06-51	0"-6"	5/2/2018	FS		0.1 JK		14.3 JK	13.4	180 JK	33.8 JK	1980 JK		0.00903 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-03	FJD03-03-20180502-12-51	6"-12"	5/2/2018	FS		0.00694 U		6.65 JK	11.9	206 JK	16.6 JK	1390 JK		0.00898 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-03	FJD03-03-20180502-12-52	6"-12"	5/2/2018	FD		0.04 JQK		11.5	16.7	75.9	31.3	2350		0.00912 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-04	FJD03-04-20180502-01-51	0"-1"	5/2/2018	FS		0.57 JK		14.9	13.7	190 JK	28	1960		0.00874 U	0.01 JQ	0.01 U	0.02 U	0.01 U
FJD03-04	FJD03-04-20180502-01-52	0"-1"	5/2/2018	FD		1.83 JK		12.1	12	787 JK	38.6	1630		0.00873 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-04	FJD03-04-20180502-06-51	0"-6"	5/2/2018	FS		0.94		13.7	13.6	75.7	24.7	1950		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-04	FJD03-04-20180502-24-51	12"-24"	5/2/2018	FS		0.00722 U		5.21	16.2	52 JK	22.6	2050		0.00941 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-04	FJD03-04-20180502-24-52	12"-24"	5/2/2018	FD		0.00799 U		5.1	15.7	27.3 JK	19.7	2140		0.01 U	0.01 U	0.01 U	0.02 U	0.02 U
FJD03-04	FJD03-04-20180502-12-51	6"-12"	5/2/2018	FS		0.06 JL		5.64	16	35.3	21.7	2070		0.00939 UJL	0.01 UJL	0.01 UJL	0.02 UJL	0.01 UJL
FJD03-04	FJD03-04-20180502-12-52	6"-12"	5/2/2018	FD		0.03 JQ		4.72	15.4	38.7	19.5	2000		0.00944 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-05	FJD03-05-20180502-01-51	0"-1"	5/2/2018	FS		8.84		8.81	5.9	1410	25.4	842		0.02 JQ	0.02 JQ	0.01 U	0.02 U	0.02 JQ
FJD03-05	FJD03-05-20180502-06-51	0"-6"	5/2/2018	FS		2.16		9.13	8.65	115	17.2	1460 JK		0.00837 U	0.01 U	0.01 U	0.02 U	0.01 U



Assessment Table  
Soil Analytical Data  
Assessment Sample Results - (b) (6) - FJD03  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
FJD03-05	FJD03-05-20180502-12-51	6"-12"	5/2/2018	FS		0.76 JL		6.05	9.03	84.8	16.3	1210		0.0088 UJL	0.01 UJL	0.01 UJL	0.02 UJL	0.01 UJL
FJD03-06	FJD03-06-20180502-01-51	0"-1"	5/2/2018	FS		22.7		7.66	5.63	2010	38.6	722		0.02 JQ	0.03 JQ	0.04 JQ	0.02 U	0.03 JQ
FJD03-06	FJD03-06-20180502-01-52	0"-1"	5/2/2018	FD		16.9		7.28	5.75	1940	42.7	804 JK		0.00828 U	0.02 JQ	0.01 U	0.02 U	0.02 JQ
FJD03-06	FJD03-06-20180502-06-51	0"-6"	5/2/2018	FS		11.3		9.53	11.2	752	36.7	1820 JK		0.00856 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-06	FJD03-06-20180502-24-51	12"-24"	5/2/2018	FS		0.27 JK		4.21	14	17.5	17.2	2040		0.0088 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-06	FJD03-06-20180502-24-52	12"-24"	5/2/2018	FD		57.1 JK		4.09	15.6	27.2	16.5	3000		0.00873 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-06	FJD03-06-20180502-12-51	6"-12"	5/2/2018	FS		0.79 JK		6.97	14.6	77	20.1	2090 JK		0.00918 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-07	FJD03-07-20180502-01-51	0"-1"	5/2/2018	FS		6.51 JL		11	8.31	1480	76.8	1110		0.03 JQL	0.04 JQL	0.01 UJL	0.02 UJL	0.03 JQL
FJD03-07	FJD03-07-20180502-06-51	0"-6"	5/2/2018	FS		5.28		7.12	6.27	1810	39	947 JK		0.00831 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-07	FJD03-07-20180502-12-51	6"-12"	5/2/2018	FS		0.88		6	8.15	397	22.2	1270		0.00914 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-08	FJD03-08-20180502-01-51	0"-1"	5/2/2018	FS		2.74		3.3	2.28	83.6	10.9	407 JK		0.07 U	0.11 U	0.14 U	0.19 U	0.15 U
FJD03-08	FJD03-08-20180502-06-51	0"-6"	5/2/2018	FS		25.9		6.59	5.96	510	21.1	967 JK		0.00816 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-08	FJD03-08-20180502-24-51	12"-24"	5/2/2018	FS		8.41		3.58	5.94	213	11.7	971 JK		0.00866 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-08	FJD03-08-20180502-12-51	6"-12"	5/2/2018	FS		14.9		9.07	10.7	3570	86.9	1540		0.00841 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD03-09NSEW	FJD03-09-DLNSEW-20180502-06-51	0"-6"	5/2/2018	FS		0.24 JK		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
FJD03-09NSEW	FJD03-09-DLNSEW-20180502-06-52	0"-6"	5/2/2018	FD		20.5 JK		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
FJD03-10NW	FJD03-10-DLNW-20180502-06-51	0"-6"	5/2/2018	FS		2.46		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA
FJD03-10NW	FJD03-10-DLNW-20180502-06-52	0"-6"	5/2/2018	FD		2.02 JH		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

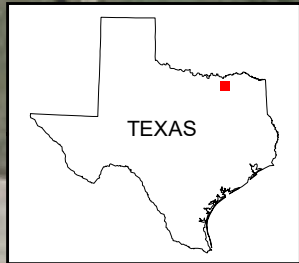
U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

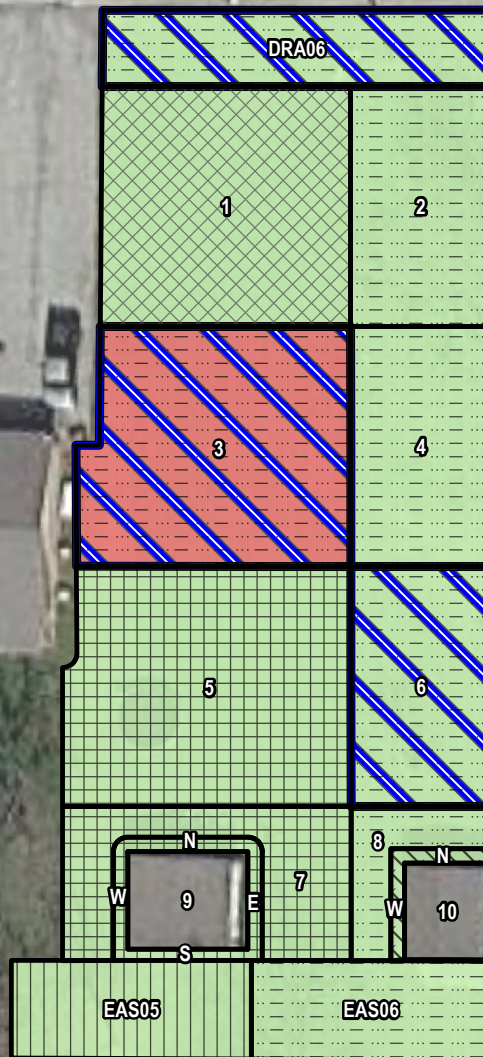
Highlighted value exceeds the Cleanup level for the specific sample analyte







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#### LEGEND

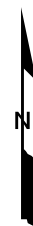
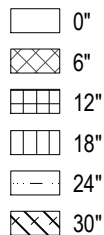
Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)

Sample Less Than  
EPA Action Level (See Table)

Sample Exceeds  
EPA Action Level (See Table)

Geotextile Liner Installed

**Excavation Depth (Inches BGS)**



**USEPA REGION 6**

**PROPERTY FJD03**

**(b) (6)**  
**EXCAVATION MAP**  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

BGS - Below Ground Surface

Removal Table  
Soil Analytical Data  
Confirmation Sample Results - (b) (6) - FJD03  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA06	DRA06-20181205-24-56	24"-24"	12/5/2018	FS		0.067		7.69	7.91	18.7	7.79	1110		0.049	0.06	0.078	0.011	0.053
EAS05	EAS05-20181203-18-56	18"-18"	12/3/2018	FS		0.051		5.89	7.07 JL	16.8	12.9	1080		0.0048	0.0033 JQ	0.0058	0.0016 U	0.0018 JQ
EAS06	EAS06-20181217-24-56	24"-24"	12/17/2018	FS		0.0089		4.84	7.03	11.3	13.2 JH	434 JK		0.0016 U	0.001 U	0.0019 JQK	0.0016 U	0.0008 U
EAS06	EAS06-20181217-24-57	24"-24"	12/17/2018	FD		0.045		4.61	7.39	12.9	12.7 JH	1510 JK		0.011	0.0057	0.017 JK	0.0022 JQ	0.0066
FJD03-01	FJD03-01-20181115-06-56	6"-6"	11/15/2018	FS		0.043		13.2	12.3	129	54.2	1720		0.0016 U	0.0013 JQ	0.0022 JQ	0.0016 U	0.0016 JQ
FJD03-02	FJD03-02-20181119-24-56	24"-24"	11/19/2018	FS		0 U		3.54	4.08	4.53	3.83 JL	1330		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD03-03	FJD03-03-20181203-24-56	24"-24"	12/3/2018	FS		0 U		7.45	21.6 JL	13.6	16.6	3540		0.0042	0.006	0.0094	0.013	0.013
FJD03-04	FJD03-04-20181119-24-56	24"-24"	11/19/2018	FS		0 U		5.12	5.34	9.49	7.62 JL	1160		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0018 JQ
FJD03-05	FJD03-05-20181128-12-56	12"-12"	11/28/2018	FS		0 U		7.2	11.7 JL	31.8	15.4	1620		0.002 JQ	0.0017 JQ	0.0022 JQ	0.0016 U	0.0008 U
FJD03-06	FJD03-06-20181219-24-56	24"-24"	12/19/2018	FS		0.072		4.49	7.52	9.27	10	985		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD03-07	FJD03-07-20181128-12-56	12"-12"	11/28/2018	FS		0.024		10	9.14 JL	2500	51.7	1020		0.002 JQ	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD03-07	FJD03-07-20181128-12-57	12"-12"	11/28/2018	FD		0 U		6.59	7.33 JL	2490	47.9	1030		0.0039 JQ	0.0023 JQ	0.0019 JQ	0.0016 U	0.0008 U
FJD03-08	FJD03-08-20181119-24-56	24"-24"	11/19/2018	FS		0.72		4.24	4.16	49.5	8.5 JL	841		0.0016 U	0.001 U	0.0018 JQ	0.0016 U	0.0014 JQ
FJD03-09NSEW	FJD03-09NSEW-20181128-12-56	12"-12"	11/28/2018	FS		0 U		7.06	7.23 JL	2050 E	40	939		0.0037 JQ	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD03-10NW	FJD03-10NW-20181128-30-56	30"-30"	11/28/2018	FS		0 U		3.51	8.49 JL	30.1	6.03	1230		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

Danny Doyle, Garry Doyle, and Lynda Kaylor

(b) (6)

Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification # FJD04  
Soil Removal Action at 905 N. Poplar St.

Dear Danny Doyle, Garry Doyle, and Lynda Kaylor: Owners of 905 N. Poplar St. Leonard, TX 75452.  
Property Legal Description: COLLEGE ADDN, BLOCK 14, LOT 7,8, ACRES .344

The purpose of this letter is to provide you with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on your property and surrounding properties; and, remediation consisted of removal of soil from various locations on your property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on your property at 905 N. Poplar St. was up to 48 inches below the ground surface. Your property was then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those.

In areas on your property and surrounding properties where contaminated soil remains at final excavation depth an orange geotextile liner was placed as a contamination notification for possible future excavation activities. Additionally, the EPA allowed the installation of the orange geotextile liner in some areas prior to receiving analytical results when maximum excavation depth was achieved and failure to backfill would delay project completion (in these areas you can disregard the use of the orange geotextile liner warning). See the attached analytical summary table and map for sampling results for your property and surrounding City of Leonard right-of-way properties, as well as locations of where the orange geotextile liner was applied to your property.

Please save this document for your permanent records. If you sell, transfer, or refinance the property you will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on your property.

The EPA thanks you for your patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If you have any questions concerning the work conducted on your property, you can contact me at 214-665-6609.

Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

Attachments:

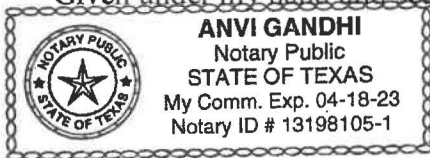
Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas

County of COLLIN

Before me, ANVI GANDHI on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of AFFIRMATION or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

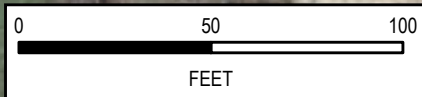
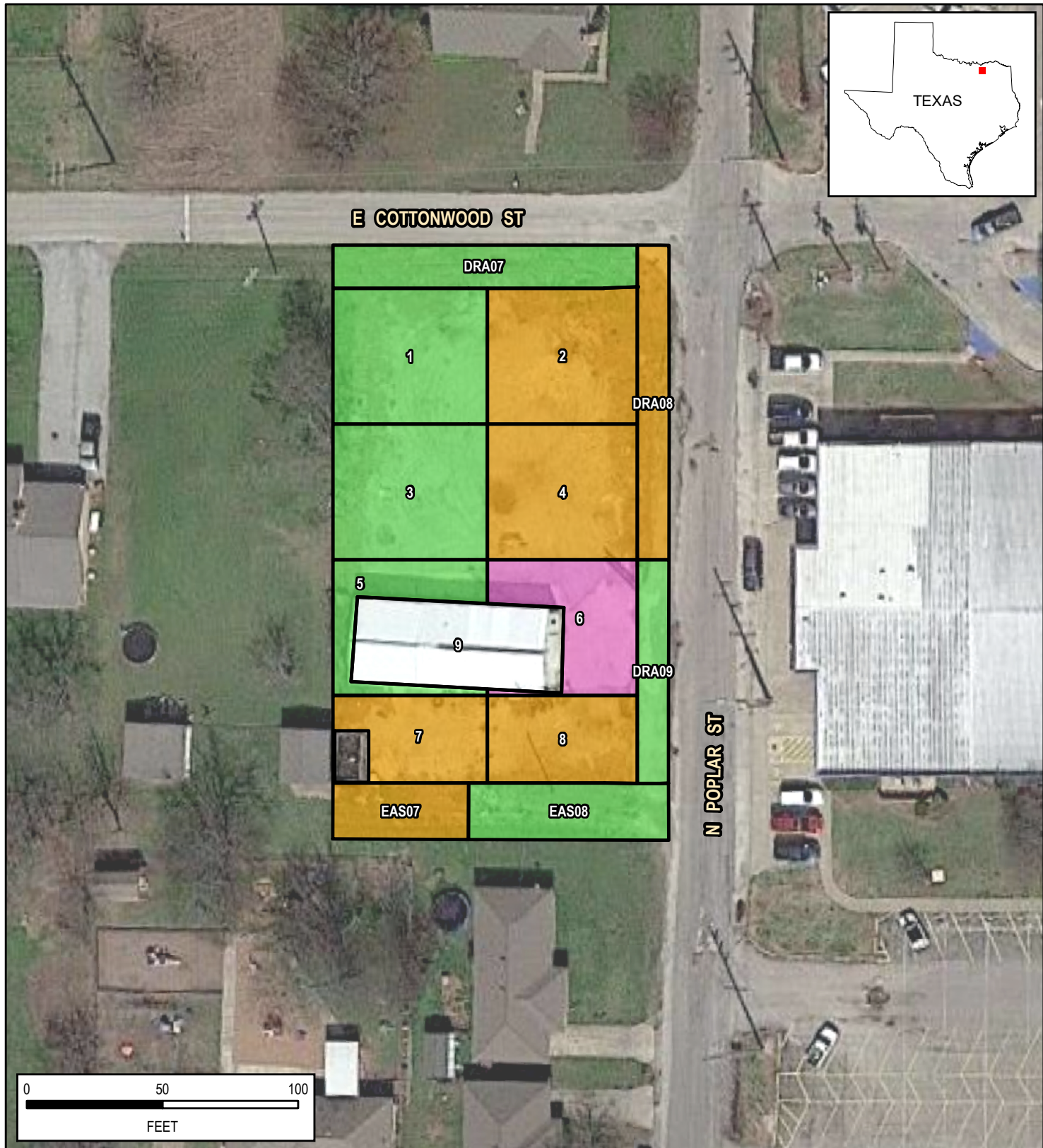
Given under my hand and seal of office this 19th day of June, (year). 2019.



(Personalized Seal)

  
Notary Public's Signature





#### LEGEND

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- PCB Contamination  $\geq 1$  mg/kg
- PCB+Metals Contamination
- Total PCBs Results  $\geq 50$  mg/kg

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



**USEPA REGION 6**

**PROPERTY FJD04**

**905 N. POPLAR**

**ASSESSMENT MAP**

**FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS**

DATE

JUNE 2019

PROJECT NO

20600.012.001.1175

SCALE

AS SHOWN

**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - Doyle - FJD04**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA07	DRA07-20180502-01-51	0"-1"	5/2/2018	FS		2.88 JL		40.1	4.88	2150	92.5	584		0.08 U	0.11 U	0.15 U	0.21 U	0.16 U
DRA07	DRA07-20180502-06-51	0"-6"	5/2/2018	FS		12.7		15.6	7.59	2860	142	879		0.03 JQ	0.04 JQ	0.01 U	0.02 U	0.05 JQ
DRA07	DRA07-20180502-24-51	12"-24"	5/2/2018	FS		0.04 JQK		2.88 JK	3.52 JK	41.6	5.05 JK	910 JK		0.00942 UJL	0.01 UJL	0.01 UJL	0.02 UJL	0.01 UJL
DRA07	DRA07-20180502-24-52	12"-24"	5/2/2018	FD		0.05 JK		6.05 JK	15.2 JK	42.1 JK	18.8 JK	2270 JK		0.009 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA07	DRA07-20180502-12-51	6"-12"	5/2/2018	FS		0.07 JK		10.1	14.7	121	21	2520		0.00956 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA08	DRA08-20180502-01-51	0"-1"	5/2/2018	FS		96.5		42.7	6.88	4230	129	918 JK		0.09 U	0.13 U	0.17 U	0.24 U	0.18 U
DRA08	DRA08-20180502-06-51	0"-6"	5/2/2018	FS		2.4 JL		21.1	5.36	3980	139	604		0.09 JQL	0.13 JQL	0.01 UJL	0.03 JQL	0.16 JQL
DRA08	DRA08-20180502-24-51	12"-24"	5/2/2018	FS		0.00739 U		8.25	16	84.7	23.3	2200 JK		0.00964 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA08	DRA08-20180502-12-51	6"-12"	5/2/2018	FS		0.00762 U		4.88 JK	11.4	111	22.1	1330		0.00993 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA08	DRA08-20180502-12-52	6"-12"	5/2/2018	FD		0.02 JQK		8.89 JK	10.4	123	21.9	1200		0.00878 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA09	DRA09-20180502-01-51	0"-1"	5/2/2018	FS		2.05		8.45	3.58 JQ	5270	52.2	474 JK		0.07 U	0.1 U	0.13 U	0.18 U	0.14 U
DRA09	DRA09-20180502-06-51	0"-6"	5/2/2018	FS		3.06 JL		8.6	5.83	1560	163	588		0.05 JQ	0.07 JQ	0.09 JQ	0.02 U	0.05 JQ
DRA09	DRA09-20180502-24-51	12"-24"	5/2/2018	FS		0.09 JK		4.65	10.1	77	20.4	1070		0.00832 U	0.01 U	0.01 U	0.02 U	0.01 U
DRA09	DRA09-20180502-12-51	6"-12"	5/2/2018	FS		42.6		5.68	11.5	98.5	24.6	1660 JK		0.00831 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-01-51	0"-1"	5/3/2018	FS		95.1		8.69	10.3	1490	63.5	1430 JK		0.00833 U	0.02 JQ	0.01 U	0.02 U	0.02 JQ
EAS07	EAS07-20180503-06-51	0"-6"	5/3/2018	FS		32.6		9.93	5.14	884	37.6	692 JK		0.02 JQ	0.04 JQ	0.07 JQ	0.01 U	0.04 JQ
EAS07	EAS07-20180503-24-51	12"-24"	5/3/2018	FS		2.42		4.25	19.6	21.3	29.3	2970		0.00861 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-24-52	12"-24"	5/3/2018	FD		3.94		5.06	16.3	15.6	18.9	2040		0.00865 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-36-51	24"-36"	5/3/2018	FS		72.6		2.74	3.78	111	14.6	858		0.00902 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-12-51	6"-12"	5/3/2018	FS		1.33 JL		5.38	15	32.1	40.7	1480		0.00905 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-01-51	0"-1"	5/3/2018	FS		4.12 JL		6.42	3.16	393	16.9	557		0.06 JQ	0.12 JQ	0.19 JQ	0.03 JQ	0.11 JQ
EAS08	EAS08-20180503-06-51	0"-6"	5/3/2018	FS		8.51		6.94	6.67	420	21.6	1090		0.03 JQ	0.06 JQ	0.09 JQ	0.01 U	0.06 JQ
EAS08	EAS08-20180503-24-51	12"-24"	5/3/2018	FS		0.91 JK		9.96	14.6	62.5 JK	30	1550 JK		0.00927 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-24-52	12"-24"	5/3/2018	FD		3.25 JK		4.76	17.3	25.6 JK	23.6	1840 JK		0.00867 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-36-51	24"-36"	5/3/2018	FS		0.08 JL		5.98	16.3	29.2	21.3	2070		0.00891 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-12-51	6"-12"	5/3/2018	FS		0.58 JL		12.6	15.5	62.8	28.2	1930		0.00885 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-01	FJD04-01-20180502-01-51	0"-1"	5/2/2018	FS		4.29 JL		12.8	4.77 JQ	4980	175	525 JK		0.04 JQ	0.06 JQ	0.01 U	0.01 U	0.07 JQ
FJD04-01	FJD04-01-20180502-06-51	0"-6"	5/2/2018	FS		0.26 JK		6.98 JQ	8.1 JQ	5580	316	1070		0.02 JQL	0.01 JQL	0.01 UJL	0.02 UJL	0.01 JQL
FJD04-01	FJD04-01-20180502-24-51	12"-24"	5/2/2018	FS		0.14 JK		4.17	30.9	53.3	24.2	4490		0.0092 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-01	FJD04-01-20180502-36-51	24"-36"	5/2/2018	FS		0.04 JK		4.36	15	141	33.7	1770		0.00913 UJL	0.01 UJL	0.01 UJL	0.02 UJL	0.01 UJL





**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - Doyle - FJD04**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
FJD04-01	FJD04-01-20180502-12-51	6"-12"	5/2/2018	FS		0.25 JK		4.63	12.7	153	21.4	1240 JK		0.00964 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-02	FJD04-02-20180502-01-51	0"-1"	5/2/2018	FS		92.9		68.2	23.3	4860	158	539 JK		0.03 JQ	0.04 JQ	0.08 JQ	0.01 U	0.03 JQ
FJD04-02	FJD04-02-20180502-06-51	0"-6"	5/2/2018	FS		0.44 JK		8.06	11	187	40.6	802 JK		0.00816 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-02	FJD04-02-20180502-24-51	12"-24"	5/2/2018	FS		0.28		3.73	12.6	83.5	22.4	1780		0.00955 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-02	FJD04-02-20180502-36-51	24"-36"	5/2/2018	FS		0.04 JK		3.91	15.1	90.8	22.8	1880		0.00909 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-02	FJD04-02-20180502-12-51	6"-12"	5/2/2018	FS		0.12 JK		5.9	11.8	46.6	21.4	1460		0.00935 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-02	FJD04-02-20180502-12-52	6"-12"	5/2/2018	FD		0.16 JK		5.65	16.1	34.9	32.2	1210		0.0093 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-03	FJD04-03-20180502-01-51	0"-1"	5/2/2018	FS		1.99 JH		9.84 U	9.84 U	21800	341	293		0.02 JQ	0.03 JQ	0.05 JQ	0.01 U	0.02 JQ
FJD04-03	FJD04-03-20180502-06-51	0"-6"	5/2/2018	FS		0.25 JK		2.03 JQ	2.88 JQ	3010	54.9	286		0.00778 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-03	FJD04-03-20180502-24-51	12"-24"	5/2/2018	FS		0.09 JK		5.02	14.9	360	27.5	2240		0.00928 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-03	FJD04-03-20180502-36-51	24"-36"	5/2/2018	FS		0.37		3.84	14.4	122	20	1630		0.00913 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-03	FJD04-03-20180502-12-51	6"-12"	5/2/2018	FS		0.04 JK		5.08	12.5	221	18	2810		0.0088 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-04	FJD04-04-20180502-01-51	0"-1"	5/2/2018	FS		4.35 JK		28.6	3.68 U	9590	177	299		0.03 JQ	0.01 U	0.01 U	0.01 U	0.06 JQ
FJD04-04	FJD04-04-20180502-06-51	0"-6"	5/2/2018	FS		64.5		3.09	6.43	1660	35.2	867		0.00793 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-04	FJD04-04-20180502-24-51	12"-24"	5/2/2018	FS		0.03 JQK		5.96	17.3	130	21.6	3730		0.02 JQ	0.02 JQ	0.01 U	0.02 U	0.01 U
FJD04-04	FJD04-04-20180502-36-51	24"-36"	5/2/2018	FS		0.18 JK		5.2	15.7	192	28.2	1230		0.00898 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-04	FJD04-04-20180502-36-52	24"-36"	5/2/2018	FD		1.11 JK		4.34	12.9	158	23.5	1050		0.00943 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-04	FJD04-04-20180502-12-51	6"-12"	5/2/2018	FS		0.23		9.44	4.86	340	34.3	427		0.00866 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-05	FJD04-05-20180503-24-51	12"-24"	5/3/2018	FS		0.06 JK		5.15	15.9	122 JK	26.4	2140		0.01 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-05	FJD04-05-20180503-24-52	12"-24"	5/3/2018	FD		0.09		5.15	15.5	333 JK	21.8	1990		0.05 JQ	0.1 JQ	0.21 JQ	0.03 JQ	0.09 JQ
FJD04-05	FJD04-05-20180503-36-51	24"-36"	5/3/2018	FS		0.02 JQ		5.67	14.7	24.1 JK	27.9	1600		0.00956 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-05	FJD04-05-20180503-36-52	24"-36"	5/3/2018	FD		0.13		7.65	19.8	362 JK	27.8	2330		0.00927 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-05	FJD04-05-20180503-12-51	6"-12"	5/3/2018	FS		0.00668 U		2.56	5.95	11.4 JK	5.21 JK	1020 JK		0.00854 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-05	FJD04-05-20180503-12-52	6"-12"	5/3/2018	FD		1.24 JK		4.85	3.76	531 JK	57.6 JK	567 JK		0.00818 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-06	FJD04-06-20180503-06-51	0"-6"	5/3/2018	FS		26.7		4.87	9.15	115	15.9	748		0.00827 U	0.12 JQ	0.01 U	0.02 U	0.11 JQ
FJD04-06	FJD04-06-20180503-24-51	12"-24"	5/3/2018	FS		0.00757 U		4.44	10.7	16.3	23.2	1370		0.0098 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-06	FJD04-06-20180503-36-51	24"-36"	5/3/2018	FS		0.02 JQK		5.22	14.2	16.1	18.6	1310		0.00934 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-06	FJD04-06-20180503-12-51	6"-12"	5/3/2018	FS		1.51 JK		5.99	7.91	118	37.5	805		0.00852 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-07	FJD04-07-20180502-01-52	0"-1"	5/2/2018	FD		4.3		4.28 JQ	3.27 U	7180	577	526		0.08 JQ	0.12 JQ	0.23 JQ	0.04 JQ	0.18 JQ
FJD04-07	FJD04-07-20180503-01-51	0"-1"	5/3/2018	FS		14.8		5.04 JQ	3.37 U	9400	701	481		0.07 JQ	0.09 JQ	0.01 U	0.02 JQ	0.1 JQ
FJD04-07	FJD04-07-20180503-01-52	0"-1"	5/3/2018	FD		15.9		4.8 JQ	4.05 U	9510	1480	411		0.05 JQ	0.07 JQ	0.14 JQ	0.02 JQ	0.08 JQ



Assessment Table  
Soil Analytical Data  
Assessment Sample Results - Doyle - FJD04  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
FJD04-07	FJD04-07-20180503-06-51	0"-6"	5/3/2018	FS		175		4.14	3.54	1140	62.3	396		0.00814 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-07	FJD04-07-20180503-24-51	12"-24"	5/3/2018	FS		0.11 JK		5.41	15.6	125	38	2080		0.00961 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-07	FJD04-07-20180503-36-51	24"-36"	5/3/2018	FS		34.1		5.03	11.5	84	32	1430		0.00937 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-07	FJD04-07-20180503-12-51	6"-12"	5/3/2018	FS		0.89 JK		5.7	18.9 JK	68.9	25.2	1690 JK		0.00965 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-07	FJD04-07-20180503-12-52	6"-12"	5/3/2018	FD		6.82		6.36	12.1	37.5 JK	24.7	874 JK		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-08	FJD04-08-20180503-01-51	0"-1"	5/3/2018	FS		38.5 JK		14.9	5.57 JQ	14300	357	551 JK		0.12 JQ	0.1 JQ	0.22 JQ	0.02 JQ	0.1 JQ
FJD04-08	FJD04-08-20180503-06-51	0"-6"	5/3/2018	FS		146		6.28 JQ	5.21 JQ	3230	141	612		0.06 JQ	0.1 JQ	0.01 U	0.02 JQ	0.09 JQ
FJD04-08	FJD04-08-20180503-24-51	12"-24"	5/3/2018	FS		0.68 JK		5.36	10.7	178	30.2	926		0.00949 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-08	FJD04-08-20180503-36-51	24"-36"	5/3/2018	FS		1.7		5.32	14.1	189	41.9	1960		0.00909 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-08	FJD04-08-20180503-12-51	6"-12"	5/3/2018	FS		3.49		4.79	8.16	212	36.3	689 JK		0.08 JQ	0.08 JQ	0.18 JQ	0.02 JQ	0.07 JQ
FJD04-09	FJD04-09-20180503-24-51	12"-24"	5/3/2018	FS		0.07 JK		7.08	16	23.1	22.2	1600		0.00992 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-09	FJD04-09-20180503-36-51	24"-36"	5/3/2018	FS		0.08 JQK		8.56	9.73	46.5	41.5	1370		0.01 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD04-09	FJD04-09-20180503-12-51	6"-12"	5/3/2018	FS		0.18 JK		1.72	2.32	1570	179	262		0.00799 U	0.01 U	0.01 U	0.02 U	0.01 U

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

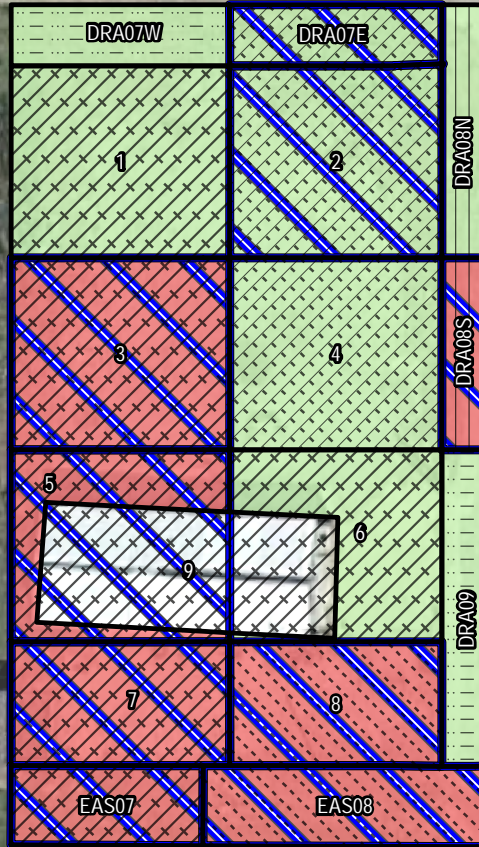
**Highlighted value exceeds the Cleanup level for the specific sample analyte**



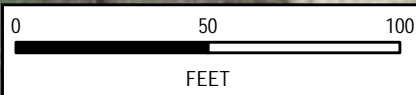




E COTTONWOOD ST



N POPLAR ST



#### LEGEND

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Sample Less Than EPA Action Level (See Table)
- Sample Exceeds EPA Action Level (See Table)

- Geotextile Liner Installed
- Excavation Depth (Inches BGS)
  - 18"
  - 24"
  - 36"
  - 46"
  - 48"

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

BGS - Below Ground Surface



USEPA REGION 6

PROPERTY FJD04  
905 N. POPLAR  
EXCAVATION MAP  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

Removal Table  
Soil Analytical Data  
Confirmation Sample Results - Doyle - FJD04  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA07E	DRA07E-20190213-48-56	48"-48"	2/13/2019	FS		0.0772		5.93	6.27	8.95	7.81	1100		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA07E	DRA07E-20190213-48-57	48"-48"	2/13/2019	FD		0.079		5.01	5.24	6.85	5.46	1160		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA07W	DRA07W-20190201-24-56	24"-24"	2/1/2019	FS		0.045		3.46	4.25	10.7	5.86	1300		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA08N	DRA08N-20190213-18-56	18"-18"	2/13/2019	FS		0.018		5.64	10.1	24.5	20	1070		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA08S	DRA08S-20190205-18-56	18"-18"	2/5/2019	FS		0.087		5.75	14.2	20.1	23.6	2250		0.0016 U	0.0014 JQ	0.0026 JQ	0.0016 U	0.0008 U
DRA08S	DRA08S-20190205-18-57	18"-18"	2/5/2019	FD		0.085		5.49	13.4	19.6	20.9	2110		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
DRA09	DRA09-20190117-24-56	24"-24"	1/17/2019	FS		0.045		5.94	11.7	22.5	19	835		0.0016 U	0.0019 JQ	0.0022 JQ	0.0016 U	0.0008 U
EAS07	EAS07-20190115-36-56	36"-36"	1/15/2019	FS		4.8		5.09	9.33	24.8	17.7	1140		0.0044	0.0039 JQ	0.0057	0.0016 U	0.0025 JQ
EAS08	EAS08-20190114-46-56	46"-46"	1/14/2019	FS		25		8.72	17.6	257	28.9	2330		0.014	0.037	0.067	0.0092	0.04
FJD04-01	FJD04-01-20190201-36-56	36"-36"	2/1/2019	FS		0.187		4.63	7.07	116	14.4	1150		0.0016 U	0.001 U	0.0024 JQ	0.0016 U	0.0008 U
FJD04-02	FJD04-02-20190213-48-56	48"-48"	2/13/2019	FS		0.22		4.08	6.12	27.4	6.8	1310		0.0016 U	0.0016 JQ	0.0023 JQ	0.0016 U	0.0017 JQ
FJD04-03	FJD04-03-20190128-36-56	36"-36"	1/28/2019	FS		3.1		4.98	5.89	33.4 B	11.8	914		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD04-04	FJD04-04-20190205-48-56	48"-48"	2/5/2019	FS		0.029		4.45	7.81	66.1	12.4	1070		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD04-05	FJD04-05-20190122-36-56	36"-36"	1/22/2019	FS		2.51		7.75	25.3	8.37	8	841		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD04-06	FJD04-06-20190122-36-56	36"-36"	1/22/2019	FS		0.034		6.48	6.31	8.17	6.71	1380		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD04-07	FJD04-07-20190107-36-56	36"-36"	1/7/2019	FS		2.7		3.22	4.87	26.6	7.42	990		0.0025 JQ	0.0028 JQ	0.0034 JQ	0.0016 U	0.003 JQ
FJD04-08	FJD04-08-20190114-46-56	46"-46"	1/14/2019	FS		7.7		6.17	9.99	59.9	17.1	1480		0.0016 U	0.0014 JQ	0.0026 JQ	0.0016 U	0.0021 JQ

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams perkilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**







## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

Brad Maxell, Leonard ISD Superintendent  
1 Tiger Alley  
Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification # FJD05  
Soil Removal Action at 905 N. Poplar St.

Dear Brad Maxwell: Regarding Leonard ISD property located at 900 N. Cedar St. Leonard, TX 75452. Property legal description: COLLEGE ADDN, BLOCK 14, LOT 9-12

The purpose of this letter is to provide Leonard Independent School District (ISD) with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on Leonard ISD property and surrounding properties; and, remediation consisted of removal of soil from various locations on Leonard ISD property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on Leonard ISD property at 900 N. Cedar St. was up to 24 inches below the ground surface. Leonard ISD properties were then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those. See the attached analytical summary table and map for sampling results for Leonard ISD property and surrounding City of Leonard right-of-way properties.

Please save this document, if Leonard ISD sells, transfers, or refinances a property Leonard ISD will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on city properties.

The EPA thanks Leonard ISD for patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If there are any questions concerning the work conducted on city property, please contact me at 214-665-6609.

Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

Attachments:

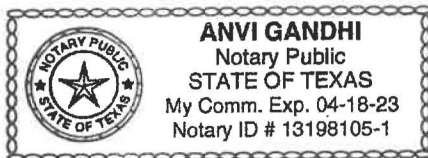
Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas

County of COLLIN

Before me, ANVI GANDHI on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of AFFIRMATION or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

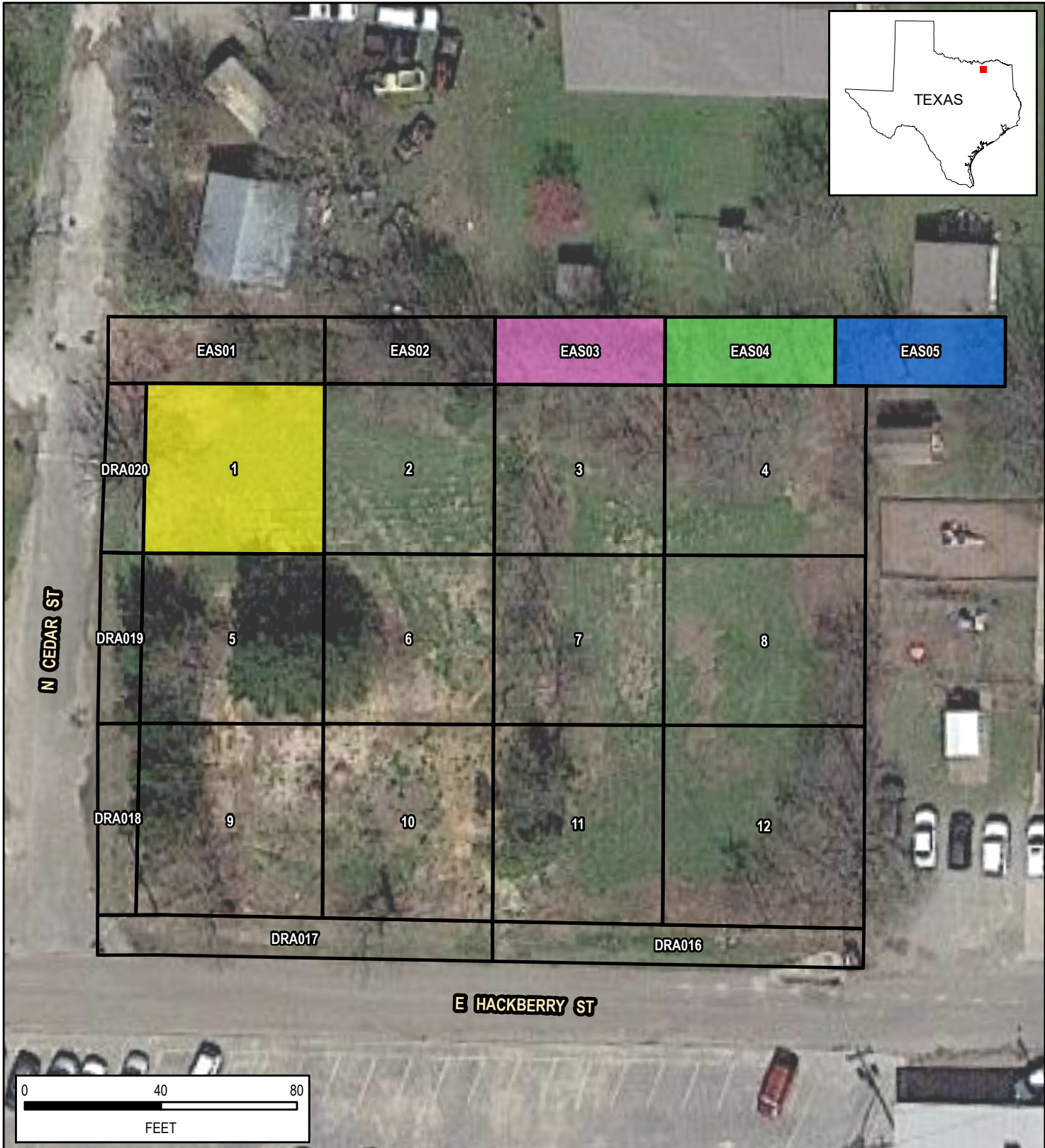
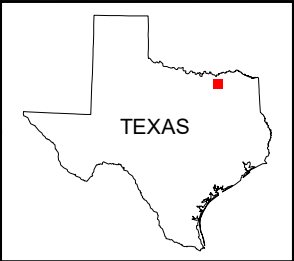
Given under my hand and seal of office this 19<sup>th</sup> day of June, (year). 2019



(Personalized Seal)

  
Notary Public's Signature





#### LEGEND

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Total PCB Results  $\geq 0.3$  to  $< 1$  mg/kg
- PCB Contamination  $\geq 1$  mg/kg
- PCB+Metals Contamination
- PCB+Metals+SVOCs Contamination

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



**USEPA REGION 6**

**PROPERTY FJD05**  
**900 N. CEDAR**  
**ASSESSMENT MAP**  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - LeonardISD - FJD05**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA16	DRA16-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		5.27	6.89	20.6	47.2	895		0.19 JQ	0.22 JQ	0.3 JQ	0.04 JQ	0.18 JQ
DRA16	DRA16-20180501-06-51	0"-6"	5/1/2018	FS		0.00684 U		7.93	9.68	17.7	65.7	1270		0.05 JQ	0.07 JQ	0.08 JQ	0.02 U	0.06 JQ
DRA16	DRA16-20180501-12-51	6"-12"	5/1/2018	FS		0.00675 U		6.12	12.6	22.2	37.8	1220		0.03 JQ	0.02 JQ	0.03 JQ	0.02 U	0.02 JQ
DRA17	DRA17-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		4.4	5.26	19.6	47.8	745		0.17 JQ	0.23 JQ	0.33 JQ	0.05 JQ	0.21 JQ
DRA17	DRA17-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		4.84	5.69	15.5	44.8	825		0.23 JQ	0.26 JQ	0.47	0.06 JQ	0.23 JQ
DRA17	DRA17-20180501-12-51	6"-12"	5/1/2018	FS		0.00667 U		6.89	8.07	9.47	22.3	1080		0.08 JQ	0.1 JQ	0.13 JQ	0.02 JQ	0.1 JQ
DRA17	DRA17-20180501-12-52	6"-12"	5/1/2018	FD		0.00672 U		3.9 JK	8.55	12.5	30.1	1180		0.02 JQ	0.02 JQ	0.01 U	0.02 U	0.02 JQ
DRA18	DRA18-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		4.52	4.82	19.8	66.1	757		0.25 JQ	0.3 JQ	0.42	0.07 JQ	0.3 JQ
DRA18	DRA18-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		4.16	4.38	15.9	53.9	881		0.21 JQ	0.26 JQ	0.36 JQ	0.06 JQ	0.25 JQ
DRA18	DRA18-20180501-12-51	6"-12"	5/1/2018	FS		0.15 JQK		3.73	4.86	13.8	47.3	882		0.19 JQ	0.24 JQ	0.27 JQ	0.05 JQ	0.21 JQ
DRA19	DRA19-20180501-01-51	0"-1"	5/1/2018	FS		0.12 JQH		4.28	3.36	18.4	50.9	633		0.13 JQ	0.16 JQ	0.24 JQ	0.03 JQ	0.14 JQ
DRA19	DRA19-20180501-06-51	0"-6"	5/1/2018	FS		0.09 JQ		6.41	4.29	23.1	66.7	785		0.06 JQ	0.08 JQ	0.1 JQ	0.02 JQ	0.06 JQ
DRA19	DRA19-20180501-06-52	0"-6"	5/1/2018	FD		0.03 U		5.1	4.5	20.8	72.1	916		0.11 JQ	0.13 JQ	0.2 JQ	0.03 JQ	0.11 JQ
DRA19	DRA19-20180501-12-51	6"-12"	5/1/2018	FS		0.03 U		6.67	3.94	18.7	50.6	772		0.06 JQ	0.07 JQ	0.1 JQ	0.02 U	0.06 JQ
DRA20	DRA20-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		6.24	3.64	17.7	47.9	657		0.06 JQ	0.07 JQ	0.1 JQ	0.02 U	0.05 JQ
DRA20	DRA20-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		10.8	3.92	11.6	44.8	766		0.04 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA20	DRA20-20180501-12-51	6"-12"	5/1/2018	FS		0.03 U		10.6	5.95	7.86	33.9	965		0.00901 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS01	EAS01-20180501-01-51	0"-1"	5/1/2018	FS		0.00619 U		12.7	5.34	10.4	30.9	962		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS01	EAS01-20180501-06-51	0"-6"	5/1/2018	FS		0.00675 U		16.9	5.53	9.89	27.4	1070		0.00886 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS01	EAS01-20180501-12-51	6"-12"	5/1/2018	FS		0.00669 U		12.6	5.67	7.31	17.6	1090		0.00877 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS02	EAS02-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		8.66	5.25	20.9	44.2	1080		0.00937 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS02	EAS02-20180501-06-51	0"-6"	5/1/2018	FS		0.00678 U		7.4	5.29	12.6	27.4	1150		0.00883 UJK	0.01 U	0.01 U	0.02 U	0.01 U
EAS02	EAS02-20180501-12-51	6"-12"	5/1/2018	FS		0.00678 U		7.22	5.2	12.2	26.9	1020		0.02 JQ	0.01 U	0.05 JQ	0.02 U	0.01 U
EAS03	EAS03-20180501-01-51	0"-1"	5/1/2018	FS		1.32 JK		4.3	4.88	1400	75.4	1000		0.08 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS03	EAS03-20180501-06-51	0"-6"	5/1/2018	FS		2.18		8.8	8.8	225	108	1440		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS03	EAS03-20180501-12-51	6"-12"	5/1/2018	FS		0.22		6.52	7.04	29.7	42.8	1560		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
EAS04	EAS04-20180501-01-51	0"-1"	5/1/2018	FS		4.22		4.91	6.68	2310	240	1240		0.04 JQ	0.01 U	0.07 JQ	0.02 U	0.01 U
EAS04	EAS04-20180501-06-51	0"-6"	5/1/2018	FS		1.97		5.34	7.18	438	78.4	1440		0.00895 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS04	EAS04-20180501-12-51	6"-12"	5/1/2018	FS		0.64 JH		7.7	11.5	243	35.7	2180		0.00864 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS05	EAS05-20180502-01-51	0"-1"	5/2/2018	FS		3.67 JK		7.29	7.3	275	47.1	1120		0.07 JQL	0.11 JQL	0.21 JQL	0.02 UJL	0.13 JQL





**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - LeonardISD - FJD05**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
EAS05	EAS05-20180502-06-51	0"-6"	5/2/2018	FS		15.2		6.73	7.3	527	31.9	1300		9.8	13.3	16.5	2.97 JQ	15.2
EAS05	EAS05-20180502-12-51	6"-12"	5/2/2018	FS		2.22		6.15	12.3	46.2	21.5	1970		0.03 JQ	0.04 JQ	0.07 JQ	0.02 U	0.07 JQ
FJD05-01	FJD05-01-20180430-01-51	0"-1"	4/30/2018	FS		0.42		10.3	3.9	11.6	95.5	885		0.05 JQ	0.06 JQ	0.08 JQ	0.02 U	0.05 JQ
FJD05-01	FJD05-01-20180430-06-51	0"-6"	4/30/2018	FS		0.00642 U		29	5.09	8.12 JK	30.4 JK	1300		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-01	FJD05-01-20180430-12-51	6"-12"	4/30/2018	FS		0.00655 U		21.2	3.3	5.37	16.4	902		0.00854 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-02	FJD05-02-20180430-01-51	0"-1"	4/30/2018	FS		0.00599 U		12.1	3.9	20.9 JK	46.3	964 JK		0.03 JQ	0.1 JQ	0.06 JQ	0.02 U	0.03 JQ
FJD05-02	FJD05-02-20180430-06-51	0"-6"	4/30/2018	FS		0.00657 U		19.7	5.5	11.7 JK	43.5 JK	1200		0.02 JQ	0.02 JQ	0.04 JQ	0.02 U	0.01 U
FJD05-02	FJD05-02-20180430-12-51	6"-12"	4/30/2018	FS		0.00646 U		20.2	5.68	9.68	20.9	1140		0.00841 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-05	FJD05-05-20180430-01-51	0"-1"	4/30/2018	FS		0.02 U		5.55	3.85	9.55	341	745		0.05 JQ	0.1 JQ	0.08 JQ	0.01 U	0.05 JQ
FJD05-05	FJD05-05-20180430-06-51	0"-6"	4/30/2018	FS		0.00615 U		8.53	5.31	8.37 JK	71.7 JK	1070		0.00791 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-05	FJD05-05-20180430-12-51	6"-12"	4/30/2018	FS		0.00632 U		4.45	3.27	4.61 JK	51.1 JK	1010		0.04 JQ	0.04 JQ	0.05 JQ	0.02 U	0.02 JQ
FJD05-06	FJD05-06-20180430-01-51	0"-1"	4/30/2018	FS		0.00576 U		9.83	4.87	17.1 JK	90.8	728		0.05 JQ	0.01 U	0.01 U	0.01 U	0.01 U
FJD05-06	FJD05-06-20180430-01-52	0"-1"	4/30/2018	FD		0.00576 U		6.62	3.37	10.1 JK	63.6	684		0.04 JQ	0.01 U	0.05 JQ	0.01 U	0.03 JQ
FJD05-06	FJD05-06-20180430-06-51	0"-6"	4/30/2018	FS		0.00619 U		18.4	5.63	14.4 JK	84.8 JK	1170		0.05 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-06	FJD05-06-20180430-12-51	6"-12"	4/30/2018	FS		0.00635 U		9.32	5.54	13.9	77.2	1200		0.00828 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-07	FJD05-07-20180430-01-51	0"-1"	4/30/2018	FS		0.00588 U		7.17	4.74	18.1	58.4	1040		0.04 JQ	0.04 JQ	0.06 JQ	0.01 U	0.02 JQ
FJD05-07	FJD05-07-20180430-06-51	0"-6"	4/30/2018	FS		0.00658 U		10.2	6.38	15.8	71.9	1120		0.00847 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-07	FJD05-07-20180430-12-51	6"-12"	4/30/2018	FS		0.00658 U		14.1	6.37	56.6	72.3	1210		0.00852 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-08	FJD05-08-20180430-01-51	0"-1"	4/30/2018	FS		0.00592 U		8.7	14.5	27.2	56	1780		0.02 JQ	0.03 JQ	0.01 U	0.01 U	0.01 JQ
FJD05-08	FJD05-08-20180430-06-51	0"-6"	4/30/2018	FS		0.00705 U		6.8	8.15	15.7 JK	41.1 JK	1440		0.04 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-08	FJD05-08-20180430-12-51	6"-12"	4/30/2018	FS		0.00666 U		5.69	12.3	11.5	25	1440		0.00868 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-09	FJD05-09-20180430-01-51	0"-1"	4/30/2018	FS		0.02 U		12.7	5.47 JK	12.5 JK	235 JK	1020		0.09 JQ	0.13 JQ	0.22 JQ	0.01 U	0.06 JQ
FJD05-09	FJD05-09-20180430-01-52	0"-1"	4/30/2018	FD		0.00577 U		15.4	9.14 JK	26.9 JK	273	1300 JK		0.22 JQ	0.14 JQ	0.35	0.05 JQ	0.25 JQ
FJD05-09	FJD05-09-20180430-06-51	0"-6"	4/30/2018	FS		0.03 U		6.65	4.96	8.21 JK	134 JK	1170		0.17 JQ	0.2 JQ	0.29 JQ	0.03 JQ	0.09 JQ
FJD05-09	FJD05-09-20180430-06-52	0"-6"	4/30/2018	FD		0.00645 U		7.71	5.7	11.5 JK	109 JK	1200		0.1 JQ	0.12 JQ	0.18 JQ	0.02 U	0.06 JQ
FJD05-09	FJD05-09-20180430-12-51	6"-12"	4/30/2018	FS		0.00631 U		14.8 JK	7.05	9.56	169 JK	1130		0.08 U	0.11 U	0.14 U	0.2 U	0.15 U
FJD05-09	FJD05-09-20180430-12-52	6"-12"	4/30/2018	FD		0.0065 U		5.39 JK	5.79	8.17 JK	41.4 JK	1490		0.07 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-10	FJD05-10-20180430-01-51	0"-1"	4/30/2018	FS		0.00574 U		9.68	4.93	10.5 JK	94.5	754 JK		0.03 JQ	0.01 U	0.01 U	0.01 U	0.01 U
FJD05-10	FJD05-10-20180430-06-51	0"-6"	4/30/2018	FS		0.12		6.32	6.57	9.84	106	1200		0.05 JQ	0.06 JQ	0.08 JQ	0.02 U	0.02 JQ
FJD05-10	FJD05-10-20180430-12-51	6"-12"	4/30/2018	FS		0.00651 U		4.57	6.16	7.95	82.7	1120		0.00849 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-11	FJD05-11-20180430-01-51	0"-1"	4/30/2018	FS		0.00579 U		6.76	6.4	10.7	61.9	849		0.04 JQ	0.04 JQ	0.05 JQ	0.01 U	0.02 JQ



Assessment Table  
Soil Analytical Data  
Assessment Sample Results - LeonardISD - FJD05  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
FJD05-11	FJD05-11-20180430-06-51	0"-6"	4/30/2018	FS		0.00658 U		33	9.02	82.7	369	1240		0.00858 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-11	FJD05-11-20180430-12-51	6"-12"	4/30/2018	FS		0.007 U		11.2	9.04	11	49.5	1370		0.00912 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-12	FJD05-12-20180430-01-51	0"-1"	4/30/2018	FS		0.00597 U		8.88	10.9 JK	18.9 JK	46.7 JK	1500		0.06 JQ	0.07 JQ	0.11 JQ	0.02 U	0.03 JQ
FJD05-12	FJD05-12-20180430-06-51	0"-6"	4/30/2018	FS		0.00678 U		6.3	18.7	13.9	26.7	1770		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD05-12	FJD05-12-20180430-12-51	6"-12"	4/30/2018	FS		0.00714 U		10	16.9	18.1	45.9	1890		0.02 JQ	0.01 U	0.02 JQ	0.02 U	0.01 U

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

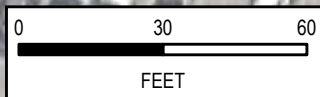
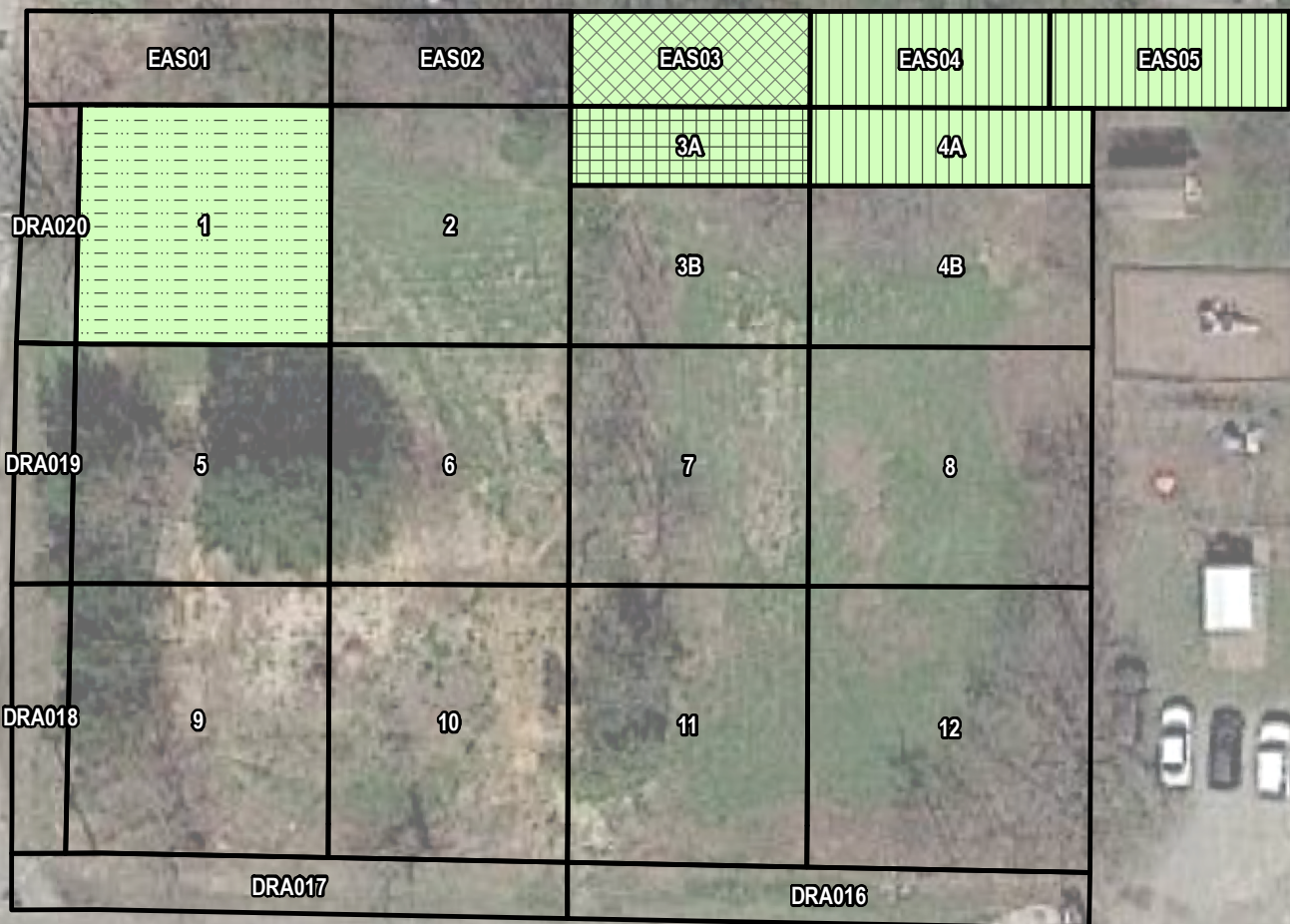
U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**







#### LEGEND

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Sample Less Than EPA Action Level (See Table)
- Sample Exceeds EPA Action Level (See Table)

#### Excavation Depth (Inches BGS)

- 0"
- 6"
- 12"
- 18"
- 24"



#### USEPA REGION 6

**PROPERTY FJD05**  
**900 N. CEDAR**  
**EXCAVATION MAP**  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

BGS - Below Ground Surface

Removal Table  
Soil Analytical Data  
Confirmation Sample Results - LeonardISD - FJD05  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
EAS03	EAS03-20181115-06-56	6"-6"	11/15/2018	FS		0.047		8.62	7.45	68.7	64.2	1290		0.0055	0.0055	0.0088	0.0077	0.0085
EAS04	EAS04-20181130-18-56	18"-18"	11/30/2018	FS		0.079		7.52	7.3 JL	19.3	10.9 JL	1190		0.0031 JQ	0.002 JQ	0.0033 JQ	0.0016 U	0.0019 JQ
EAS05	EAS05-20181203-18-56	18"-18"	12/3/2018	FS		0.051		5.89	7.07 JL	16.8	12.9	1080		0.0048	0.0033 JQ	0.0058	0.0016 U	0.0018 JQ
FJD05-01	FJD05-01-20190118-24-56	24"-24"	1/18/2019	FS		0 U		15.6	5.26	7.59	7.19	986		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U
FJD05-03A	FJD05-03A-20181130-12-56	12"-12"	11/30/2018	FS		0 U		11.1	5.93 JL	12.2	35.5 JL	1100		0.0027 JQ	0.0026 JQ	0.0045	0.0016 U	0.0021 JQ
FJD05-04A	FJD05-04A-20181130-18-56	18"-18"	11/30/2018	FS		0 U		9.62	7.16 JL	18.8	17.8 JL	1080		0.0016 U	0.0014 JQ	0.0026 JQ	0.0016 U	0.0021 JQ

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams perkilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

Highlighted value exceeds the Cleanup level for the specific sample analyte





## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

Brad Maxell, Leonard ISD Superintendent  
1 Tiger Alley  
Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification # FJD06  
Soil Removal Action at 905 N. Poplar St.

Dear Brad Maxwell: Regarding Leonard ISD property located at 308 E. Hackberry St. Leonard, TX 75452. Property legal description: S9030 COLLEGE ADDN, BLOCK 14, LOT 13

The purpose of this letter is to provide Leonard Independent School District (ISD) with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on Leonard ISD property and surrounding properties; and, remediation consisted of removal of soil from various locations on Leonard ISD property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on Leonard ISD property at 308 E. Hackberry St. was up to 12 inches below the ground surface. Leonard ISD properties were then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those. See the attached analytical summary table and map for sampling results for Leonard ISD property and surrounding City of Leonard right-of-way properties.

Please save this document, if Leonard ISD sells, transfers, or refinances a property Leonard ISD will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on city properties.

The EPA thanks Leonard ISD for patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If there are any questions concerning the work conducted on city property, please contact me at 214-665-6609.



Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

Attachments:

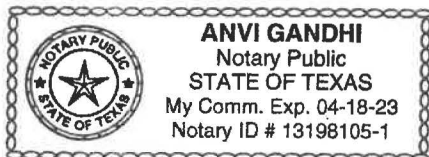
Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas

County of COLLIN

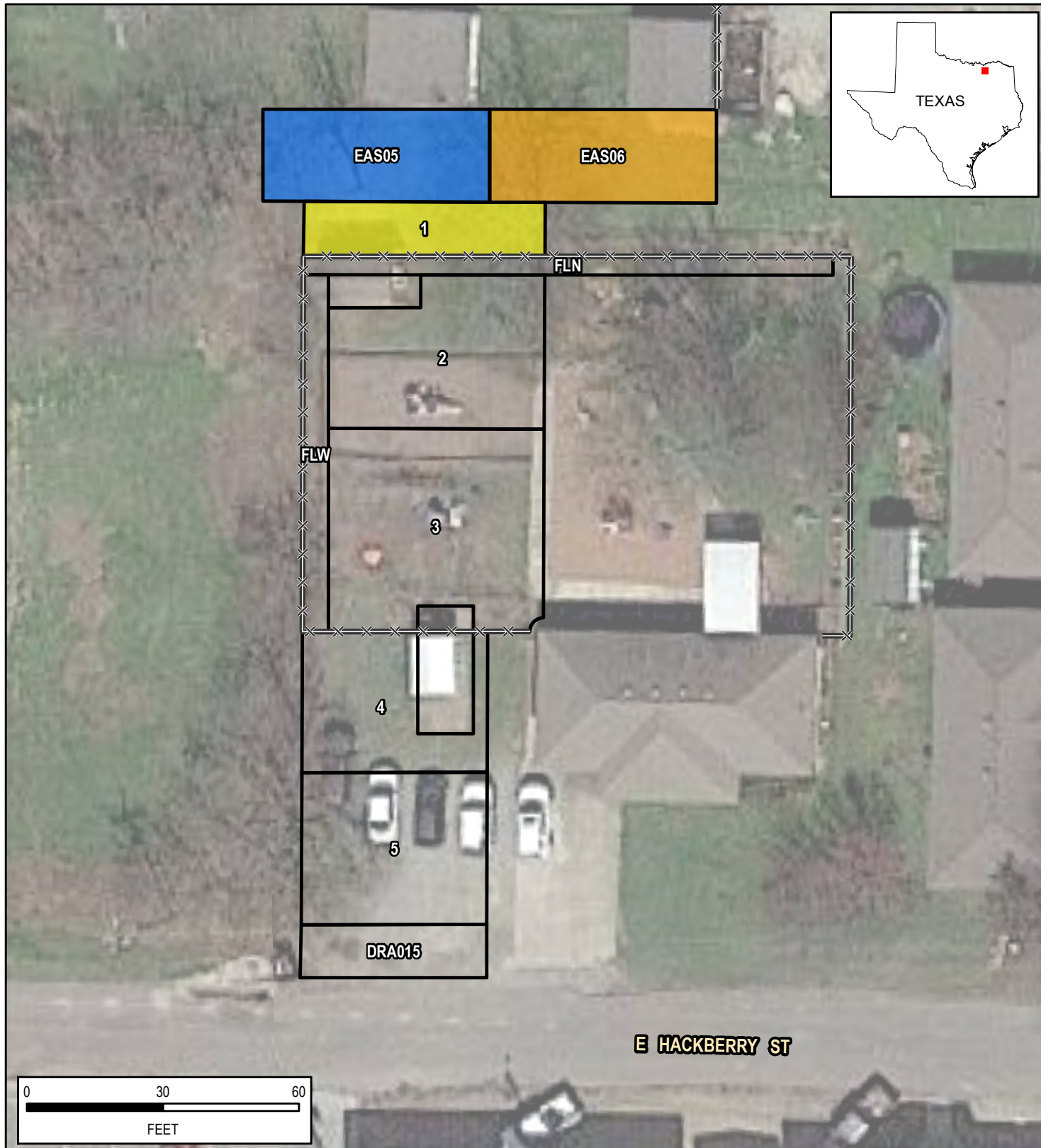
Before me, ANVI GANDHI on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of AFFIRMATION or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 19th day of June, (year). 2019



(Personalized Seal)

  
Notary Public's Signature



#### LEGEND

- Fence Line
- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid, FL - Fenceline Grid)
- Total PCB Results  $\geq 0.3$  to  $< 1$  mg/kg
- PCB+Metals+SVOCs Contamination
- Total PCBs Results  $\geq 50$  mg/kg

SOURCE: © GOOGLE EARTH, 2018  
 TDD: 0001/18-175  
 SEMS: TXD980865109  
 SSID: 061D



**USEPA REGION 6**

**PROPERTY FJD06**  
**308 E. HACKBERRY**  
**ASSESSMENT MAP**  
 FJ DOYLE SALVAGE REMOVAL  
 LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

Assessment Table  
Soil Analytical Data  
Assessment Sample Results - LeonardISD - FJD06  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA15	DRA15-20180502-06-51	0"-6"	5/2/2018	FS		0.00654 U		6.84	16.5	17.1	63.1	1220		0.02 JQ	0.02 JQ	0.01 JQ	0.02 U	0.02 JQ
DRA15	DRA15-20180502-12-51	6"-12"	5/2/2018	FS		0.00703 U		5.34	14.2	12.7	36.3	1400		0.05 JQ	0.04 JQ	0.06 JQ	0.02 U	0.04 JQ
EAS05	EAS05-20180502-01-51	0"-1"	5/2/2018	FS		3.67 JK		7.29	7.3	275	47.1	1120		0.07 JQL	0.11 JQL	0.21 JQL	0.02 UJL	0.13 JQL
EAS05	EAS05-20180502-06-51	0"-6"	5/2/2018	FS		15.2		6.73	7.3	527	31.9	1300		9.8	13.3	16.5	2.97 JQ	15.2
EAS05	EAS05-20180502-12-51	6"-12"	5/2/2018	FS		2.22		6.15	12.3	46.2	21.5	1970		0.03 JQ	0.04 JQ	0.07 JQ	0.02 U	0.07 JQ
EAS06	EAS06-20180502-01-51	0"-1"	5/2/2018	FS		64.2		5.12	4.28	277	26.4	602 JK		0.09 JQ	0.16 JQ	0.33 JQ	0.05 JQ	0.2 JQ
EAS06	EAS06-20180502-06-51	0"-6"	5/2/2018	FS		30.3		7.92	7.73	736	30.4	913 JK		0.02 JQ	0.03 JQ	0.01 U	0.02 U	0.03 JQ
EAS06	EAS06-20180502-24-51	12"-24"	5/2/2018	FS		0.25		4.77	14.9	26	19.7	2040		0.00874 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS06	EAS06-20180502-12-51	6"-12"	5/2/2018	FS		4.9		10.5	13.8	2040	40.7	1910 JK		0.00869 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-01	FJD06-01-20180502-01-51	0"-1"	5/2/2018	FS		0.72 JK		7.13	11.8	215	88.3	1690		0.04 JQ	0.04 JQ	0.07 JQ	0.02 U	0.04 JQ
FJD06-01	FJD06-01-20180502-06-51	0"-6"	5/2/2018	FS		0.13		6.5	12.5	87.6	94	1750 JK		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-01	FJD06-01-20180502-24-51	12"-24"	5/2/2018	FS		0.12		2.64	5.4	13.3	14.2	1130 JK		0.00837 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-01	FJD06-01-20180502-12-51	6"-12"	5/2/2018	FS		0.01 JQK		5.78	13	20.6	34.2	1740 JK		0.0094 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-02	FJD06-02-20180430-01-51	0"-1"	4/30/2018	FS		0.11 JK		5.45	11.7	51.6 JK	50.2	1760 JK		0.02 JQ	0.01 JQ	0.03 JQ	0.02 U	0.01 JQ
FJD06-02	FJD06-02-20180430-06-51	0"-6"	4/30/2018	FS		0.00706 U		5.69	14.7	11	19.4	1960		0.00926 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-02	FJD06-02-20180430-12-51	6"-12"	4/30/2018	FS		0.0071 U		4.55	18.4	14.7 JK	23.7	2140 JK		0.00926 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-03	FJD06-03-20180430-01-51	0"-1"	4/30/2018	FS		0.00607 U		5.08	8.64	21	56.6	870		0.01 JQ	0.01 U	0.02 JQ	0.02 U	0.02 JQ
FJD06-03	FJD06-03-20180430-06-51	0"-6"	4/30/2018	FS		0.007 U		7.51	17.4	40	727 JK	1760		0.00918 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-03	FJD06-03-20180430-06-52	0"-6"	4/30/2018	FD		0.08 JK		6.16	14.3	36.1	53.9 JK	1720		0.00906 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-03	FJD06-03-20180430-12-51	6"-12"	4/30/2018	FS		0.00699 U		6.08	14.2	14.7	51.3	1680		0.0093 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-04	FJD06-04-20180430-01-51	0"-1"	4/30/2018	FS		0.08 JK		8.73	14.8	42.1	198	1310		0.08 U	0.11 U	0.14 U	0.2 U	0.15 U
FJD06-04	FJD06-04-20180430-06-51	0"-6"	4/30/2018	FS		0.00699 U		7.01	14.1	19.3 JK	65.4 JK	1450		0.00911 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-04	FJD06-04-20180430-12-51	6"-12"	4/30/2018	FS		0.00707 U		6.42	12.8	25.6	80.5	1080		0.00927 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-05	FJD06-05-20180430-01-51	0"-1"	4/30/2018	FS		0.0064 U		7.25	13	29.1	58.7	1150		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD06-05	FJD06-05-20180430-06-51	0"-6"	4/30/2018	FS		0.00592 U		5.79	11.8	20.4 JK	282 JK	907		0.00761 U	0.01 U	0.01 U	0.01 U	0.01 U
FJD06-05	FJD06-05-20180430-12-51	6"-12"	4/30/2018	FS		0.00688 U		4.93	18	13.5	56	1750		0.00891 U	0.01 U	0.01 U	0.02 U	0.01 U

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

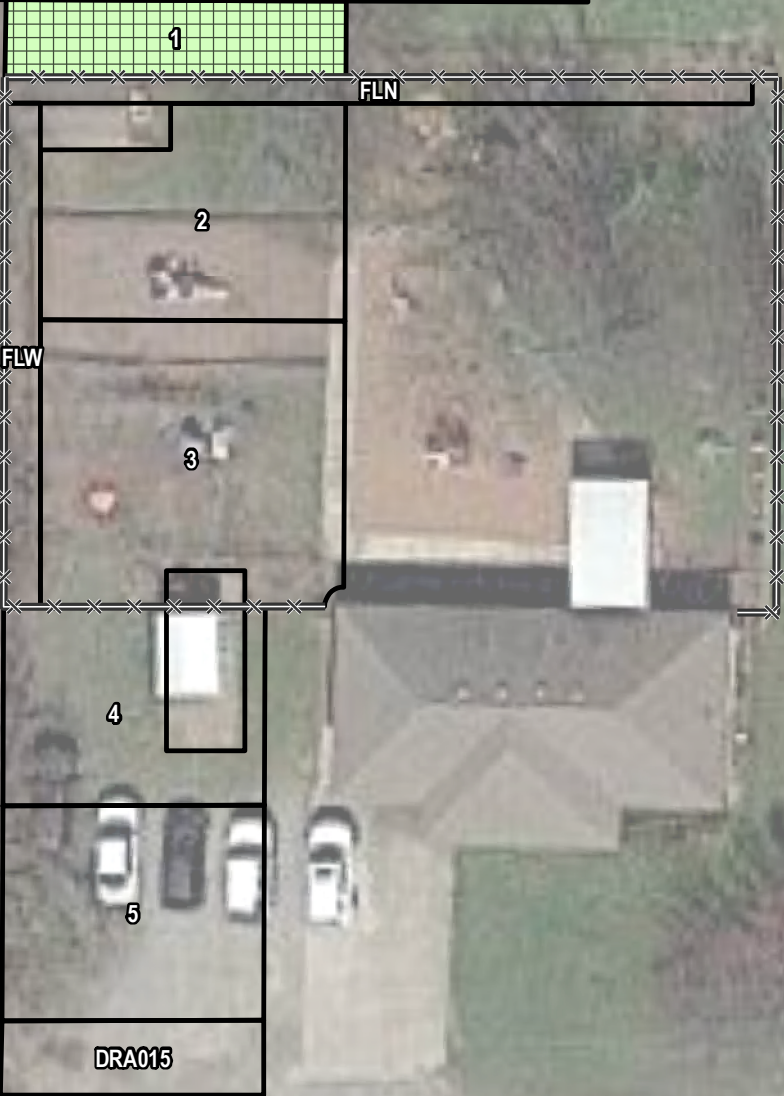
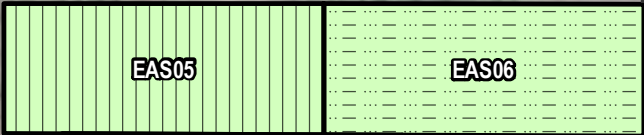
U - Analyte not detected

Bold - Value exceeds the detection limit for specific sample analyte

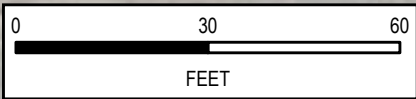
Highlighted value exceeds the Cleanup level for the specific sample analyte







**E HACKBERRY ST**

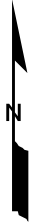


**LEGEND**

- Fence Line
- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid, FL - Fenceline Grid)
- Sample Less Than EPA Action Level (See Table)
- Sample Exceeds EPA Action Level (See Table)

**Excavation Depth (Inches BGS)**

- 0"
- 12"
- 18"
- 24"



**USEPA REGION 6**

**PROPERTY FJD06**  
**308 E. HACKBERRY**  
**EXCAVATION MAP**  
 FJ DOYLE SALVAGE REMOVAL  
 LEONARD, FANNIN COUNTY, TEXAS

DATE JUNE 2019	PROJECT NO 20600.012.001.1175	SCALE AS SHOWN
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SOURCE: © GOOGLE EARTH, 2018  
 TDD: 0001/18-175  
 SEMS: TXD980865109  
 SSID: 061D

BGS - Below Ground Surface

Removal Table  
Soil Analytical Data  
Confirmation Sample Results - LeonardISD - FJD06  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
EAS05	EAS05-20181203-18-56	18"-18"	12/3/2018	FS		0.051		5.89	7.07 JL	16.8	12.9	1080		0.0048	0.0033 JQ	0.0058	0.0016 U	0.0018 JQ
EAS06	EAS06-20181217-24-56	24"-24"	12/17/2018	FS		0.0089		4.84	7.03	11.3	13.2 JH	434 JK		0.0016 U	0.001 U	0.0019 JQK	0.0016 U	0.0008 U
EAS06	EAS06-20181217-24-57	24"-24"	12/17/2018	FD		0.045		4.61	7.39	12.9	12.7 JH	1510 JK		0.011	0.0057	0.017 JK	0.0022 JQ	0.0066
FJD06-01	FJD06-01-20181120-12-56	12"-12"	11/20/2018	FS		0 U		5.7	12.3	28.4	34.1	1710		0.0016 U	0.001 U	0.0017 JQ	0.0016 U	0.0013 JQ

Notes:

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NP - Not Published

mg/kg - milligrams perkilogram.

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K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**







## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

Brad Maxell, Leonard ISD Superintendent  
1 Tiger Alley  
Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification # FJD07  
Soil Removal Action at 905 N. Poplar St.

Dear Brad Maxwell: Regarding Leonard ISD property located at 310 E. Hackberry St. Leonard, TX 75452. Property legal description: COLLEGE ADDN, BLOCK 14, LOT 14 & W 20' OF 15

The purpose of this letter is to provide Leonard Independent School District (ISD) with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on Leonard ISD property and surrounding properties; and, remediation consisted of removal of soil from various locations on Leonard ISD property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on Leonard ISD property at 310 E. Hackberry St. was up to 12 inches below the ground surface. Leonard ISD properties were then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those. See the attached analytical summary table and map for sampling results for Leonard ISD property and surrounding City of Leonard right-of-way properties.

In areas on surrounding properties where contaminated soil remains at final excavation depth an orange geotextile liner was placed as a contamination notification for possible future excavation activities. See the attached analytical summary tables and maps for sampling results for Leonard ISD property and surrounding City of Leonard right-of-way properties, as well as locations of where the orange geotextile liner was applied to surrounding City of Leonard right-of-way properties.

Please save this document, if Leonard ISD sells, transfers, or refinances a property Leonard ISD will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on city properties.

The EPA thanks Leonard ISD for patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If there are any questions concerning the work conducted on city property, please contact me at 214-665-6609.

Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

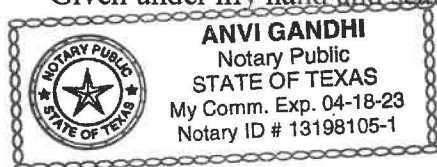
Attachments:

Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas  
County of COLLIN

Before me, ANVI GANDHI on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of AFFIRMATION or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

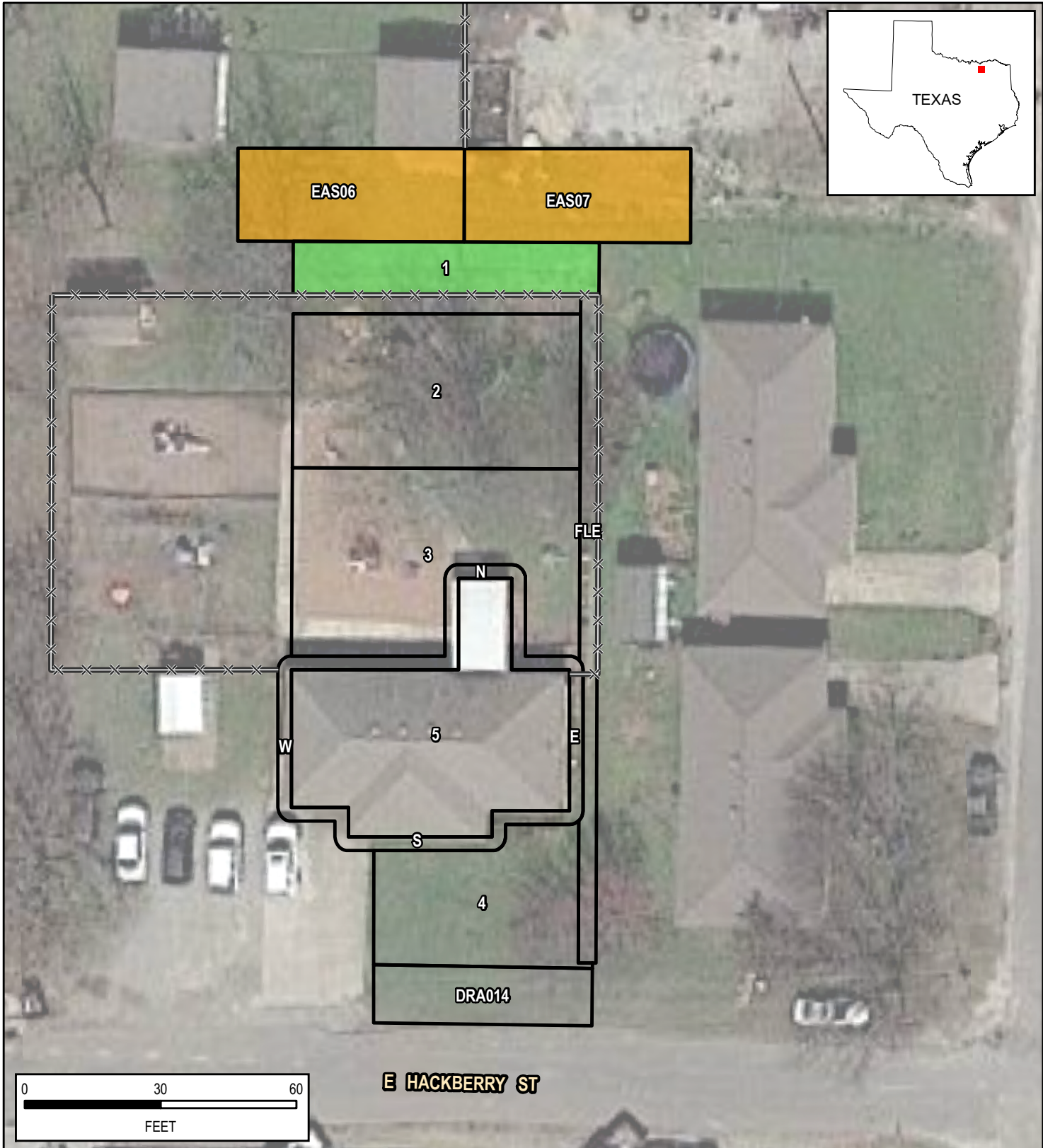
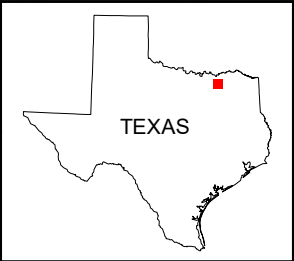
Given under my hand and seal of office this 19th day of June, (year). 2019.



(Personalized Seal)

  
Notary Public's Signature





#### LEGEND

- Fence Line
- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid, FL - Fenceline Grid)
- PCB+Metals Contamination
- Total PCBs Results  $\geq 50$  mg/kg

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



USEPA REGION 6

**PROPERTY FJD07**  
**310 E. HACKBERRY**  
**ASSESSMENT MAP**  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE	PROJECT NO	SCALE
JUNE 2019	20600.012.001.1175	AS SHOWN

**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - LeonardISD - FJD07**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA14	DRA14-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		5.18	13.1	21	46.9	2110		0.04 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA14	DRA14-20180501-06-51	0"-6"	5/1/2018	FS		0.0068 U		6.44	9.99	25	58.1	1190		0.04 JQ	0.06 JQ	0.09 JQ	0.02 U	0.05 JQ
DRA14	DRA14-20180501-12-51	6"-12"	5/1/2018	FS		0.00681 U		5.36	9.34	14	63	909		0.02 JQ	0.02 JQ	0.01 U	0.02 U	0.02 JQ
EAS06	EAS06-20180502-01-51	0"-1"	5/2/2018	FS		64.2		5.12	4.28	277	26.4	602 JK		0.09 JQ	0.16 JQ	0.33 JQ	0.05 JQ	0.2 JQ
EAS06	EAS06-20180502-06-51	0"-6"	5/2/2018	FS		30.3		7.92	7.73	736	30.4	913 JK		0.02 JQ	0.03 JQ	0.01 U	0.02 U	0.03 JQ
EAS06	EAS06-20180502-24-51	12"-24"	5/2/2018	FS		0.25		4.77	14.9	26	19.7	2040		0.00874 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS06	EAS06-20180502-12-51	6"-12"	5/2/2018	FS		4.9		10.5	13.8	2040	40.7	1910 JK		0.00869 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-01-51	0"-1"	5/3/2018	FS		95.1		8.69	10.3	1490	63.5	1430 JK		0.00833 U	0.02 JQ	0.01 U	0.02 U	0.02 JQ
EAS07	EAS07-20180503-06-51	0"-6"	5/3/2018	FS		32.6		9.93	5.14	884	37.6	692 JK		0.02 JQ	0.04 JQ	0.07 JQ	0.01 U	0.04 JQ
EAS07	EAS07-20180503-24-51	12"-24"	5/3/2018	FS		2.42		4.25	19.6	21.3	29.3	2970		0.00861 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-24-52	12"-24"	5/3/2018	FD		3.94		5.06	16.3	15.6	18.9	2040		0.00865 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-36-51	24"-36"	5/3/2018	FS		72.6		2.74	3.78	111	14.6	858		0.00902 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-12-51	6"-12"	5/3/2018	FS		1.33 JL		5.38	15	32.1	40.7	1480		0.00905 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-01	FJD07-01-20180502-01-51	0"-1"	5/2/2018	FS		6.81		5.77	11.8	313	46.9	1510		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-01	FJD07-01-20180502-06-51	0"-6"	5/2/2018	FS		1.67		6.08	14.9	165	323	1840		0.07 JQ	0.11 JQ	0.15 JQ	0.02 JQ	0.11 JQ
FJD07-01	FJD07-01-20180502-24-51	12"-24"	5/2/2018	FS		0.36 JK		5.37	11.9	11.9	18.1	1480 JK		0.00915 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-01	FJD07-01-20180502-12-51	6"-12"	5/2/2018	FS		0.1 JK		5.83	16.7	30.4	42.1	2060 JK		0.00877 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-02	FJD07-02-20180430-01-51	0"-1"	4/30/2018	FS		0.07		2.52	5.63	24.6	10.8	498		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-02	FJD07-02-20180430-01-52	0"-1"	4/30/2018	FD		0.18		3.54	7.74	30.8 JK	15.9 JK	636		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-02	FJD07-02-20180430-06-51	0"-6"	4/30/2018	FS		0.05 JK		7.04	15.7	70.1	34.4	1310		0.00933 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-02	FJD07-02-20180430-06-52	0"-6"	4/30/2018	FD		0.22 JK		8.25	17.1	62.9	36.8	1620		0.09 U	0.13 U	0.16 U	0.23 U	0.17 U
FJD07-02	FJD07-02-20180430-12-51	6"-12"	4/30/2018	FS		0.09		6.12	15.8	39.1 JK	27 JK	2110		0.00904 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-02	FJD07-02-20180430-12-52	6"-12"	4/30/2018	FD		0.03 U		6.93	18	15.4 JK	49.3 JK	1610		0.09 U	0.13 U	0.16 U	0.23 U	0.17 U
FJD07-03	FJD07-03-20180430-01-51	0"-1"	4/30/2018	FS		0.08 JK		3.7	8.21	23.8 JK	17.2 JK	796		0.03 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-03	FJD07-03-20180430-06-51	0"-6"	4/30/2018	FS		0.00689 U		4.15	9.68	42.5	19.4	947		0.07 JQ	0.05 JQ	0.08 JQ	0.02 U	0.02 JQ
FJD07-03	FJD07-03-20180430-12-51	6"-12"	4/30/2018	FS		0.00699 U		4.94	13.2	12.9	32.9	1240		0.00899 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-04	FJD07-04-20180430-01-51	0"-1"	4/30/2018	FS		0.00669 U		7.72	12.9	33.2	30.7	998		0.00854 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-04	FJD07-04-20180430-06-51	0"-6"	4/30/2018	FS		0.00707 U		7.36	9.86	18.8	22.3	860		0.00928 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-04	FJD07-04-20180430-12-51	6"-12"	4/30/2018	FS		0.00698 U		6.47	12	14.4	23.9	895		0.00922 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD07-05NSEW	FJD07-05-DLNSEW-20180502-06-51	0"-6"	5/2/2018	FS		0.34 U		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA

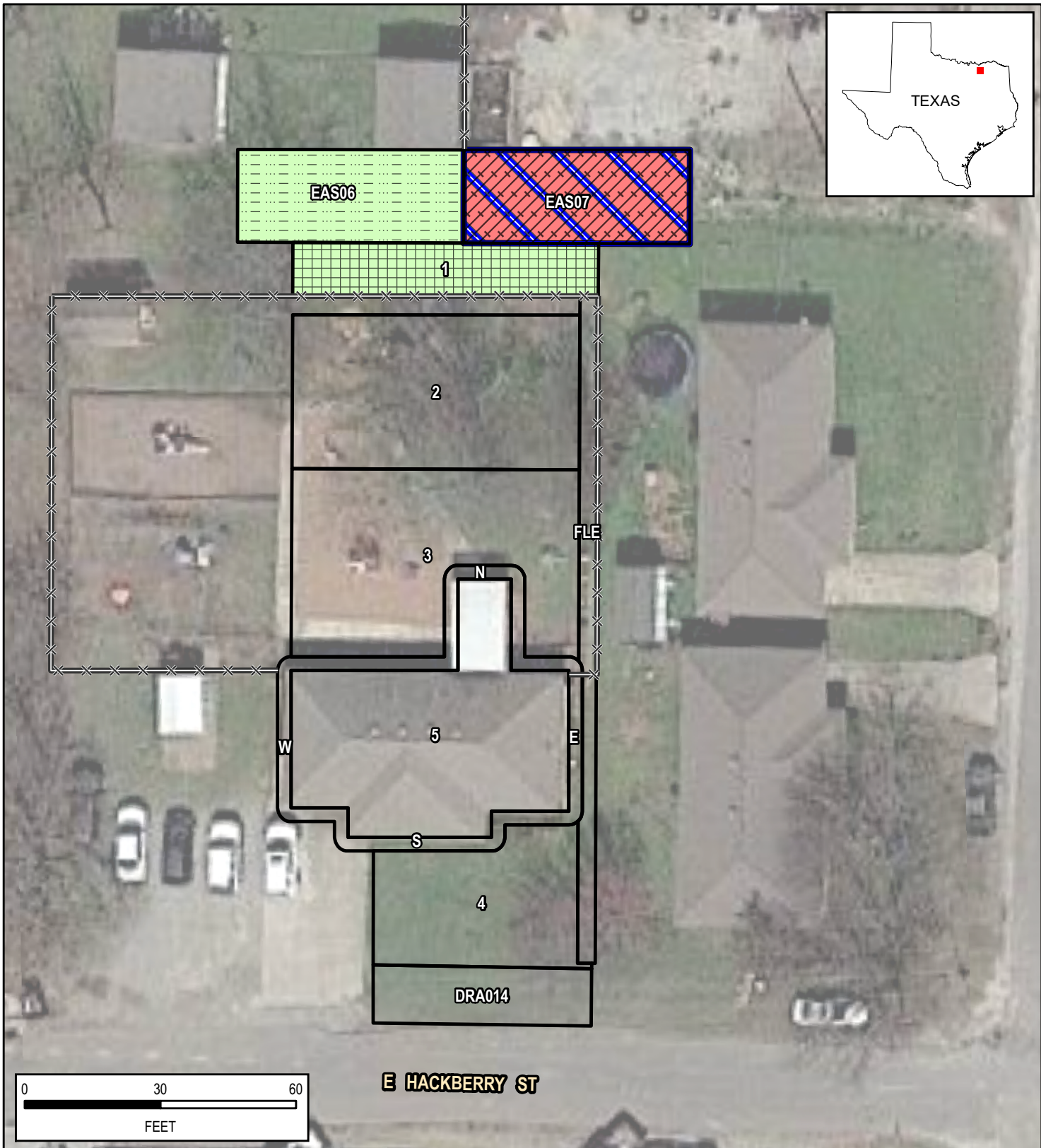
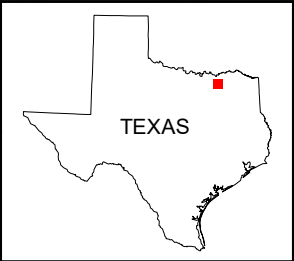


Assessment Table  
Soil Analytical Data  
Assessment Sample Results - LeonardISD - FJD07  
Leonard, Fannin County, Texas

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NP - Not Published  
mg/kg - milligrams per kilogram.  
" - Inches  
H - High bias  
J - The identification of the analyte is acceptable; the reported value is an estimate  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit  
U - Analyte not detected  
**Bold** - Value exceeds the detection limit for specific sample analyte  
**Highlighted value exceeds the Cleanup level for the specific sample analyte**







#### LEGEND

== Fence Line

□ Sample Grid (EAS - Easement Grid,  
DRA - Drainage Grid, FL - Fenceline Grid)

Sample Less Than  
EPA Action Level (See Table)

Sample Exceeds  
EPA Action Level (See Table)

Geotextile Liner Installed

#### Excavation Depth (Inches BGS)

0"

12"

24"

36"

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

BGS - Below Ground Surface



#### USEPA REGION 6

**PROPERTY FJD07**  
**310 E. HACKBERRY**  
**EXCAVATION MAP**  
FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

Removal Table  
Soil Analytical Data  
Confirmation Sample Results - LeonardISD - FJD07  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
EAS06	EAS06-20181217-24-56	24"-24"	12/17/2018	FS		0.0089		4.84	7.03	11.3	13.2 JH	434 JK		0.0016 U	0.001 U	0.0019 JQK	0.0016 U	0.0008 U
EAS06	EAS06-20181217-24-57	24"-24"	12/17/2018	FD		0.045		4.61	7.39	12.9	12.7 JH	1510 JK		0.011	0.0057	0.017 JK	0.0022 JQ	0.0066
EAS07	EAS07-20190115-36-56	36"-36"	1/15/2019	FS		4.8		5.09	9.33	24.8	17.7	1140		0.0044	0.0039 JQ	0.0057	0.0016 U	0.0025 JQ
FJD07-01	FJD07-01-20181128-12-56	12"-12"	11/28/2018	FS		0 U		6.96	15.1 JL	26.6	23.8	1590		0.0016 U	0.0014 JQ	0.0023 JQ	0.0016 U	0.0008 U

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams perkilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**





## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

(b) (6)

Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification # FJD08  
Soil Removal Action at 905 N. Poplar St.

Dear (b) (6). Owner of (b) (6) Leonard, TX 75452. Property Legal  
Description: COLLEGE ADDN, (b) (6)

The purpose of this letter is to provide you with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on your property and surrounding properties; and, remediation consisted of removal of soil from various locations on your property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on your property at (b) (6) was up to 24 inches below the ground surface. Your property was then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those.

In areas on your property and surrounding properties where contaminated soil remains at final excavation depth an orange geotextile liner was placed as a contamination notification for possible future excavation activities. Additionally, the EPA allowed the installation of the orange geotextile liner in some areas prior to receiving analytical results when maximum excavation depth was achieved and failure to backfill would delay project completion (in these areas you can disregard the use of the orange geotextile liner warning). See the attached analytical summary table and map for sampling results for your property and surrounding City of Leonard right-of-way properties, as well as locations of where the orange geotextile liner was applied to your property.

Please save this document for your permanent records. If you sell, transfer, or refinance the property you will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on your property.

The EPA thanks you for your patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If you have any questions concerning the work conducted on your property, you can contact me at 214-665-6609.



Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

Attachments:

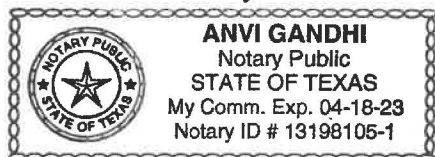
Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas

County of COLLIN

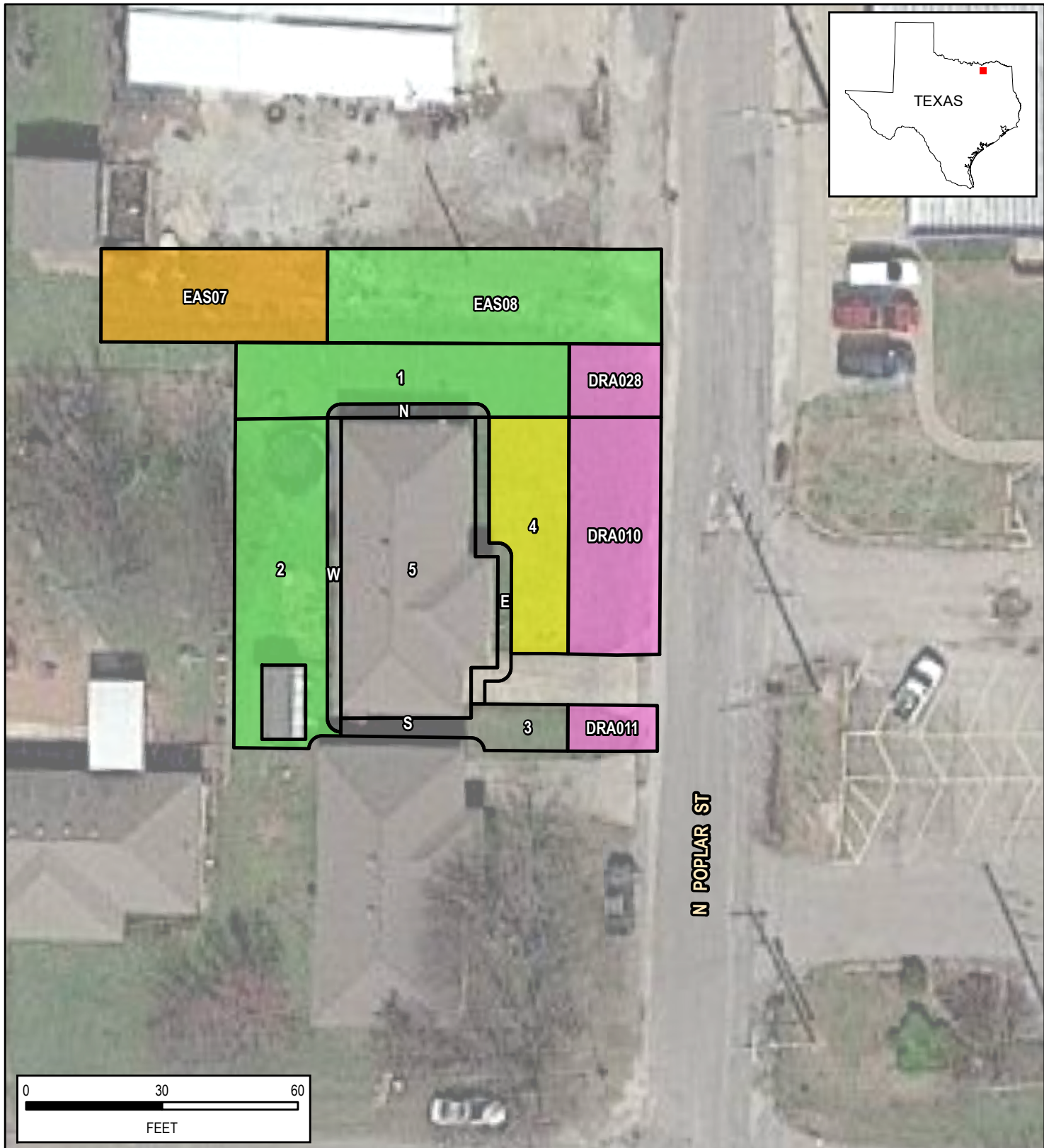
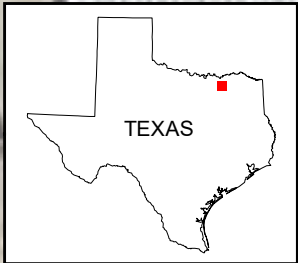
Before me, ANVI GANDHI on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of AFFIRMATION or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 19th day of June, (year). 2019.



(Personalized Seal)

  
\_\_\_\_\_  
Notary Public's Signature



#### LEGEND

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Total PCB Results  $\geq 0.3$  to  $< 1$  mg/kg
- PCB Contamination  $\geq 1$  mg/kg
- PCB+Metals Contamination
- Total PCBs Results  $\geq 50$  mg/kg

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



**USEPA REGION 6**

**PROPERTY FJD08**

**(b) (6)**

**ASSESSMENT MAP**

FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

**Assessment Table**  
**Soil Analytical Data**  
**Assessment Sample Results - (b) (6) - FJD08**  
**Leonard, Fannin County, Texas**

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA10	DRA10-20180501-01-51	0"-1"	5/1/2018	FS		4.96		9.58	16.2	189	43.7	1550		0.00854 U	0.26 JQ	0.01 U	0.02 U	0.24 JQ
DRA10	DRA10-20180501-06-51	0"-6"	5/1/2018	FS		6.72		11	17.5	186	53.7	1430		0.05 JQ	0.07 JQ	0.12 JQ	0.02 U	0.08 JQ
DRA10	DRA10-20180501-12-51	6"-12"	5/1/2018	FS		0.61 JH		5.79	12.9	79.2	35.1	1280		0.03 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA11	DRA11-20180501-01-51	0"-1"	5/1/2018	FS		1.37 JK		11	11.7	146	36.1	1040		0.25 JQ	0.4 JQ	0.6	0.08 JQ	0.37 JQ
DRA11	DRA11-20180501-01-52	0"-1"	5/1/2018	FD		0.63 JK		11.5	12.8	134	36.4	1020		0.28 JQ	0.45	0.65	0.11 JQ	0.48
DRA11	DRA11-20180501-06-51	0"-6"	5/1/2018	FS		4.9 JH		19.3	16.2	122	42.9	1440		0.23 JQ	0.38 JQ	0.54	0.03 JQ	0.39 JQ
DRA11	DRA11-20180501-12-51	6"-12"	5/1/2018	FS		0.21		8.23	18.5	31.4	30.8	1760		0.03 JQ	0.01 U	0.06 JQ	0.02 U	0.01 U
DRA28	DRA28-20180502-01-51	0"-1"	5/2/2018	FS		38.7		6.93	10.9	1120	82.4	1130 JK		0.15 JQ	0.21 JQ	0.4	0.06 JQ	0.23 JQ
DRA28	DRA28-20180502-06-51	0"-6"	5/2/2018	FS		4.53		7.77	14.7	295	57.6	1340		0.06 JQ	0.11 JQ	0.2 JQ	0.02 JQ	0.1 JQ
DRA28	DRA28-20180502-24-51	12"-24"	5/2/2018	FS		2.35		8.54	17.9	64.5	42.5	1600 JK		0.17 JQ	0.12 U	0.15 U	0.21 U	0.16 U
DRA28	DRA28-20180502-12-51	6"-12"	5/2/2018	FS		3.02		6.91	12.9	40.9	45	1400 JK		0.02 JQ	0.02 JQ	0.01 U	0.02 U	0.02 JQ
EAS07	EAS07-20180503-01-51	0"-1"	5/3/2018	FS		95.1		8.69	10.3	1490	63.5	1430 JK		0.00833 U	0.02 JQ	0.01 U	0.02 U	0.02 JQ
EAS07	EAS07-20180503-06-51	0"-6"	5/3/2018	FS		32.6		9.93	5.14	884	37.6	692 JK		0.02 JQ	0.04 JQ	0.07 JQ	0.01 U	0.04 JQ
EAS07	EAS07-20180503-24-51	12"-24"	5/3/2018	FS		2.42		4.25	19.6	21.3	29.3	2970		0.00861 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-24-52	12"-24"	5/3/2018	FD		3.94		5.06	16.3	15.6	18.9	2040		0.00865 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-36-51	24"-36"	5/3/2018	FS		72.6		2.74	3.78	111	14.6	858		0.00902 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS07	EAS07-20180503-12-51	6"-12"	5/3/2018	FS		1.33 JL		5.38	15	32.1	40.7	1480		0.00905 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-01-51	0"-1"	5/3/2018	FS		4.12 JL		6.42	3.16	393	16.9	557		0.06 JQ	0.12 JQ	0.19 JQ	0.03 JQ	0.11 JQ
EAS08	EAS08-20180503-06-51	0"-6"	5/3/2018	FS		8.51		6.94	6.67	420	21.6	1090		0.03 JQ	0.06 JQ	0.09 JQ	0.01 U	0.06 JQ
EAS08	EAS08-20180503-24-51	12"-24"	5/3/2018	FS		0.91 JK		9.96	14.6	62.5 JK	30	1550 JK		0.00927 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-24-52	12"-24"	5/3/2018	FD		3.25 JK		4.76	17.3	25.6 JK	23.6	1840 JK		0.00867 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-36-51	24"-36"	5/3/2018	FS		0.08 JL		5.98	16.3	29.2	21.3	2070		0.00891 U	0.01 U	0.01 U	0.02 U	0.01 U
EAS08	EAS08-20180503-12-51	6"-12"	5/3/2018	FS		0.58 JL		12.6	15.5	62.8	28.2	1930		0.00885 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-01	FJD08-01-20180502-01-51	0"-1"	5/2/2018	FS		8.78 JL		6.59	15.9	142	39.8	1890		0.04 JQL	0.05 JQL	0.09 JQL	0.02 UJL	0.05 JQL
FJD08-01	FJD08-01-20180502-06-51	0"-6"	5/2/2018	FS		7.11		7.41	13.7	85.7	35.9	1520		0.07 JQ	0.08 JQ	0.11 JQ	0.02 U	0.07 JQ
FJD08-01	FJD08-01-2018050202-24-51	12"-24"	5/2/2018	FS		0.65 JK		6.2	16.7	41.3	27.3	2450 JK		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-01	FJD08-01-2018050202-24-52	12"-24"	5/2/2018	FD		1.57 JK		6.5	23.6	26.1	27.5	3290 JK		0.009 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-01	FJD08-01-20180502-12-51	6"-12"	5/2/2018	FS		1.08 JK		4.47	18.6	22	27	2030		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-02	FJD08-02-20180430-01-51	0"-1"	4/30/2018	FS		3.74 JK		9.5	11.8	59.2	69.7	994		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-02	FJD08-02-20180430-12-51	6"-12"	4/30/2018	FS		0.14		4.31	16.2	15.1	22.1	1800		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U





Assessment Table  
Soil Analytical Data  
Assessment Sample Results - (b) (6) - FJD08  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
FJD08-02	FJD08-02-20180503-06-51	0"-6"	5/3/2018	FS		0.03 U		6.96	16.3	75.2	62.9	1740		0.03 JQ	0.03 JQ	0.05 JQ	0.02 U	0.02 JQ
FJD08-03	FJD08-03-20180430-01-51	0"-1"	4/30/2018	FS		0.03 JQH		8.54	10.2	33.9 JK	26.1	1120 JK		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-03	FJD08-03-20180430-06-51	0"-6"	4/30/2018	FS		0.07 JH		10.3	14.1	31.8	35.3	1220		0.04 JQ	0.01 U	0.08 JQ	0.02 U	0.05 JQ
FJD08-03	FJD08-03-20180430-06-52	0"-6"	4/30/2018	FD		0.26 JK		6.2	9.53	24.3	24	826		0.03 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-03	FJD08-03-20180430-12-51	6"-12"	4/30/2018	FS		0.17 JL		8.31	14.1	26.8	25.9	1630		0.04 JQ	0.04 JQ	0.06 JQ	0.02 U	0.04 JQ
FJD08-04	FJD08-04-20180430-01-51	0"-1"	4/30/2018	FS		0.00657 U		10.5	11.9	61.4	28	1240		0.03 JQ	0.04 JQ	0.05 JQ	0.02 U	0.04 JQ
FJD08-04	FJD08-04-20180430-06-51	0"-6"	4/30/2018	FS		0.29 JH		15.6	21.7	50.5	36.3	1920		0.04 JQ	0.01 U	0.06 JQ	0.02 U	0.04 JQ
FJD08-04	FJD08-04-20180430-06-52	0"-6"	4/30/2018	FD		0.2		15.1	17.2	48.8	47.5	1730		0.00898 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-04	FJD08-04-20180430-12-51	6"-12"	4/30/2018	FS		0.55 JH		11.7	21.2	73.9 JK	51	2290 JK		0.02 JQ	0.01 U	0.01 U	0.02 U	0.01 U
FJD08-04	FJD08-04-20180430-12-52	6"-12"	4/30/2018	FD		0.19		9.39	18.9	47 JK	46.1	1690 JK		0.02 JQ	0.01 JQ	0.03 JQ	0.02 U	0.01 U
FJD08-05ESW	FJD08-05-DLESW-20180502-51	0"-6"	5/2/2018	FS		0.45 JL		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

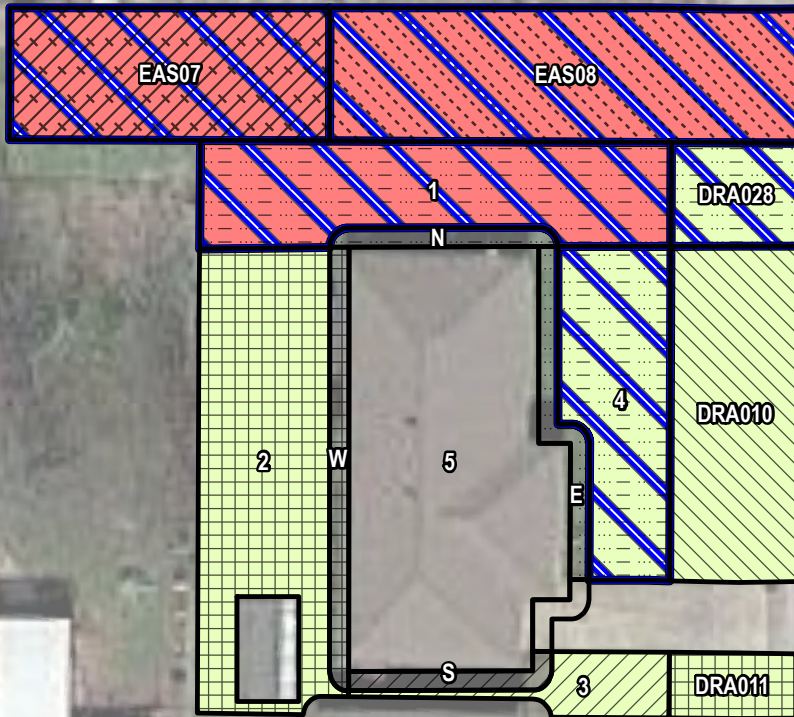
Q - Detected below the quantitation limit

U - Analyte not detected

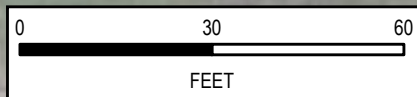
**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**





N POPLAR ST



#### LEGEND

- Sample Grid (EAS - Easement Grid, DRA - Drainage Grid)
- Sample Less Than EPA Action Level (See Table)
- Sample Exceeds EPA Action Level (See Table)
- Geotextile Liner Installed

#### Excavation Depth (Inches BGS)

- 0"
- 12"
- 14"
- 16"
- 24"
- 36"
- 46"

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

BGS - Below Ground Surface



USEPA REGION 6

PROPERTY FJD08

(b) (6)

EXCAVATION MAP

FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

Removal Table  
Soil Analytical Data  
Confirmation Sample Results - (b) (6) - FJD08  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA10	DRA010-20181203-16-56	16"-16"	12/3/2018	FS		0.8		9.48	13.3 JL	97.2	35.5	1240		0.033	0.046	0.094	0.013	0.06
DRA11	DRA011-20181203-12-56	12"-12"	12/3/2018	FS		0.58		18.9	12.5 JL	193	36.1	1190		0.13	0.18	0.39	0.037	0.19
DRA28	DRA028-20181217-24-56	24"-24"	12/17/2018	FS		0.039		6.69	12.9	35.5	25.8 JH	1280 JK		0.0075	0.0062	0.0099 JH	0.0024 JQ	0.0056
EAS07	EAS07-20190115-36-56	36"-36"	1/15/2019	FS		4.8		5.09	9.33	24.8	17.7	1140		0.0044	0.0039 JQ	0.0057	0.0016 U	0.0025 JQ
EAS08	EAS08-20190114-46-56	46"-46"	1/14/2019	FS		25		8.72	17.6	257	28.9	2330		0.014	0.037	0.067	0.0092	0.04
FJD08-01	FJD08-01-20181212-24-56	24"-24"	12/12/2018	FS		0.021		6.88	20.4	16.1	22.9	3070		0.0016 U	0.0015 JQ	0.0028 JQ	0.0016 U	0.0014 JQ
FJD08-02	FJD08-02-20181130-12-56	12"-12"	11/30/2018	FS		0 U		7.3	22.4 JL	19.1	33.8 JL	1740		0.0024 JQ	0.0028 JQ	0.006	0.0036 JQ	0.0061
FJD08-03	FJD08-03-20181203-14-56	14"-14"	12/3/2018	FS		0.024		8.41	13.5 JL	22.6	34.8	1120		0.0047	0.0059	0.0095	0.0022 JQ	0.0052
FJD08-04	FJD08-04-20181212-24-56	24"-24"	12/12/2018	FS		0.04		5.83	14.7	15.9	21.9	1690		0.0016 U	0.001 U	0.0012 U	0.0016 U	0.0008 U

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams perkilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the Cleanup level for the specific sample analyte**







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270-2102

19 June 2019

(b) (6)

Leonard, Texas 75452

RE: F.J. Doyle Salvage, Property Identification # FJD09  
Soil Removal Action at 905 N. Poplar St.

Dear (b) (6). Owner of (b) (6) Leonard, TX 75452. Property Legal  
Description: COLLEGE ADDN, (b) (6)

The purpose of this letter is to provide you with documentation confirming that the United States Environmental Protection Agency (EPA) recently completed the removal of soil contaminated by polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals on your property and surrounding properties; and, remediation consisted of removal of soil from various locations on your property. The remediation activities were conducted based on previous sampling results reviewed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and the Agency for Toxic Substances and Disease Registry (ATSDR). The removal assessment activities in the area were conducted between 26 April 2018 and 05 October 2018. The removal action activities in the area were conducted between 05 November 2018 and 19 February 2019. The maximum excavation depth (variable due to the depth of bedrock) on your property at (b) (6) was up to 12 inches below the ground surface. Your property was then backfilled with clean soil and sodded, seeded, backfilled with limestone rock, or some combination of those. See the attached analytical summary table and map for sampling results for your property and surrounding City of Leonard right-of-way properties.

Please save this document for your permanent records. If you sell, transfer, or refinance the property you will have documentation of the PCB, SVOCs, and metal contamination and the EPA removal action conducted on your property.

The EPA thanks you for your patience and understanding as we know that cleanup activities of this nature are disruptive to the community. If you have any questions concerning the work conducted on your property, you can contact me at 214-665-6609.

Sincerely,



Gary Moore  
Federal On-Scene Coordinator  
U.S. EPA Region 6 - Superfund Division

Attachments:

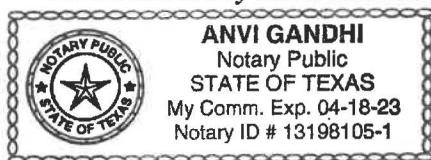
Assessment Map  
Assessment Table  
Excavation Map  
Removal Table

State of Texas

County of COLLIN

Before me, ANVI GANDHI on this day personally appeared GARY MOORE, known to me (or proved to me on the oath of AFFIRMATION or through (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

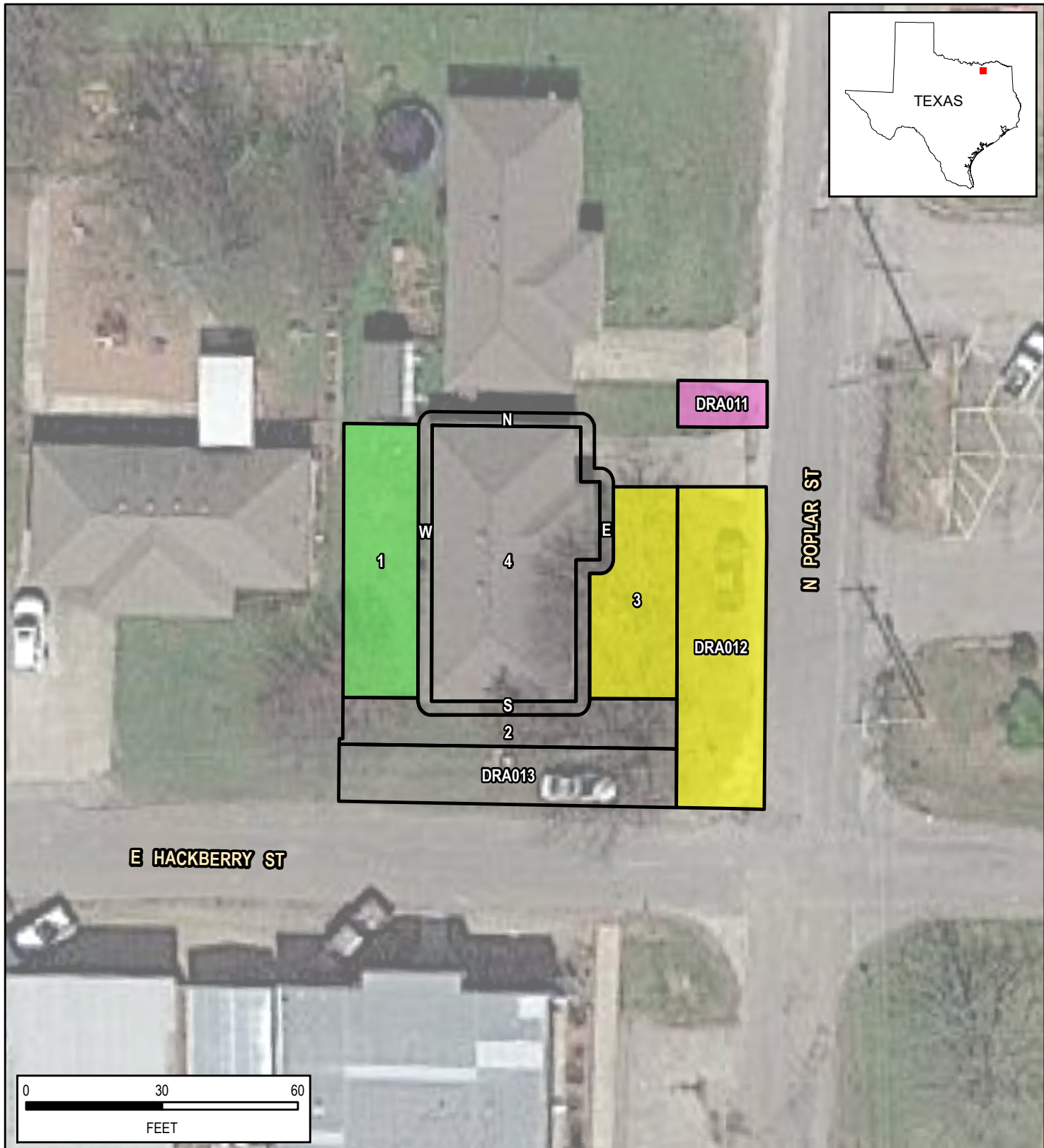
Given under my hand and seal of office this 19th day of June, (year). 2019



(Personalized Seal)

  
Notary Public's Signature





#### LEGEND

- Sample Grid (DRA - Drainage Grid)
- Total PCB Results  $\geq 0.3$  to  $< 1$  mg/kg
- PCB Contamination  $\geq 1$  mg/kg
- PCB+Metals Contamination

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



USEPA REGION 6

PROPERTY FJD09

(b) (6)

ASSESSMENT MAP

FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

Assessment Table  
Soil Analytical Data  
Assessment Sample Results - (b) (6) - FJD09  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	COC-Metals	Arsenic	Cobalt	Copper	Lead	Manganese	COC-SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA11	DRA11-20180501-01-51	0"-1"	5/1/2018	FS		1.37 JK		11	11.7	146	36.1	1040		0.25 JQ	0.4 JQ	0.6	0.08 JQ	0.37 JQ
DRA11	DRA11-20180501-01-52	0"-1"	5/1/2018	FD		0.63 JK		11.5	12.8	134	36.4	1020		0.28 JQ	0.45	0.65	0.11 JQ	0.48
DRA11	DRA11-20180501-06-51	0"-6"	5/1/2018	FS		4.9 JH		19.3	16.2	122	42.9	1440		0.23 JQ	0.38 JQ	0.54	0.03 JQ	0.39 JQ
DRA11	DRA11-20180501-12-51	6"-12"	5/1/2018	FS		0.21		8.23	18.5	31.4	30.8	1760		0.03 JQ	0.01 U	0.06 JQ	0.02 U	0.01 U
DRA12	DRA12-20180501-01-51	0"-1"	5/1/2018	FS		0.75		6.78	9.92	80	37.4	1010		0.25 JQ	0.43	0.73	0.04 JQ	0.43
DRA12	DRA12-20180501-06-51	0"-6"	5/1/2018	FS		0.28 JH		7.52	11.4	62.4	36.3	1100		0.08 JQ	0.12 JQ	0.17 JQ	0.03 JQ	0.12 JQ
DRA12	DRA12-20180501-06-52	0"-6"	5/1/2018	FD		0.33 JH		6.97	10.2	77.7	38.7	965		0.27 JQ	0.26 JQ	0.3 JQ	0.04 JQ	0.2 JQ
DRA12	DRA12-20180501-12-51	6"-12"	5/1/2018	FS		0.32 JH		8.45	10.5	54	33.5	983		0.04 JQ	0.05 JQ	0.08 JQ	0.02 U	0.07 JQ
DRA13	DRA13-20180501-01-51	0"-1"	5/1/2018	FS		0.03 U		6.44	14.3	25.9	54	1390		0.05 JQ	0.01 U	0.01 U	0.02 U	0.01 U
DRA13	DRA13-20180501-06-51	0"-6"	5/1/2018	FS		0.03 U		5.13	11.6	25.9	66.3	1160		0.09 JQ	0.11 JQ	0.13 JQ	0.02 JQ	0.1 JQ
DRA13	DRA13-20180501-12-51	6"-12"	5/1/2018	FS		0.00679 U		5.37	16	24.9	70.6	1870		0.02 JQ	0.01 U	0.03 JQ	0.02 U	0.01 U
FJD09-01	FJD09-01-20180430-01-51	0"-1"	4/30/2018	FS		0.00643 U		8.9	10.4	42.4	29.5	960		0.03 JQ	0.01 U	0.06 JQ	0.02 U	0.05 JQ
FJD09-01	FJD09-01-20180430-06-51	0"-6"	4/30/2018	FS		2		4.52	18.9	12.3	37.5	1850		0.00892 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD09-01	FJD09-01-20180430-12-51	6"-12"	4/30/2018	FS		0.00717 U		4.26	13.5	13.2	23.3	691		0.00916 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD09-02	FJD09-02-20180430-01-51	0"-1"	4/30/2018	FS		0.00633 U		5.4	11.5	28.4 JK	48.7	2980 JJK		0.03 JQ	0.04 JQ	0.07 JQ	0.02 U	0.04 JQ
FJD09-02	FJD09-02-20180430-06-51	0"-6"	4/30/2018	FS		0.00703 U		5.18	9.93	23 JK	38.4	932 JK		0.02 JQ	0.01 U	0.06 JQ	0.02 U	0.01 U
FJD09-02	FJD09-02-20180430-12-51	6"-12"	4/30/2018	FS		0.00705 U		3.78	14.7	15.1	24.8	1390		0.00937 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD09-03	FJD09-03-20180430-01-51	0"-1"	4/30/2018	FS		0.51 JH		8.58	14.1	64.1	40.6	1380		0.18 JQ	0.29 JQ	0.46	0.06 JQ	0.32 JQ
FJD09-03	FJD09-03-20180430-06-51	0"-6"	4/30/2018	FS		0.00687 U		5.94	9.57	72.8	37.3	1130		0.08 JQ	0.15 JQ	0.21 JQ	0.03 JQ	0.17 JQ
FJD09-03	FJD09-03-20180430-12-51	6"-12"	4/30/2018	FS		0.08		5.49	21.6	16.9 JK	41.1	2270 JK		0.00915 U	0.01 U	0.01 U	0.02 U	0.01 U
FJD09-04NSEW	FJD09-04-DLNSEW-20180502-51	0"-6"	5/2/2018	FS		0.09 JK		NA	NA	NA	NA	NA		NA	NA	NA	NA	NA

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams per kilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

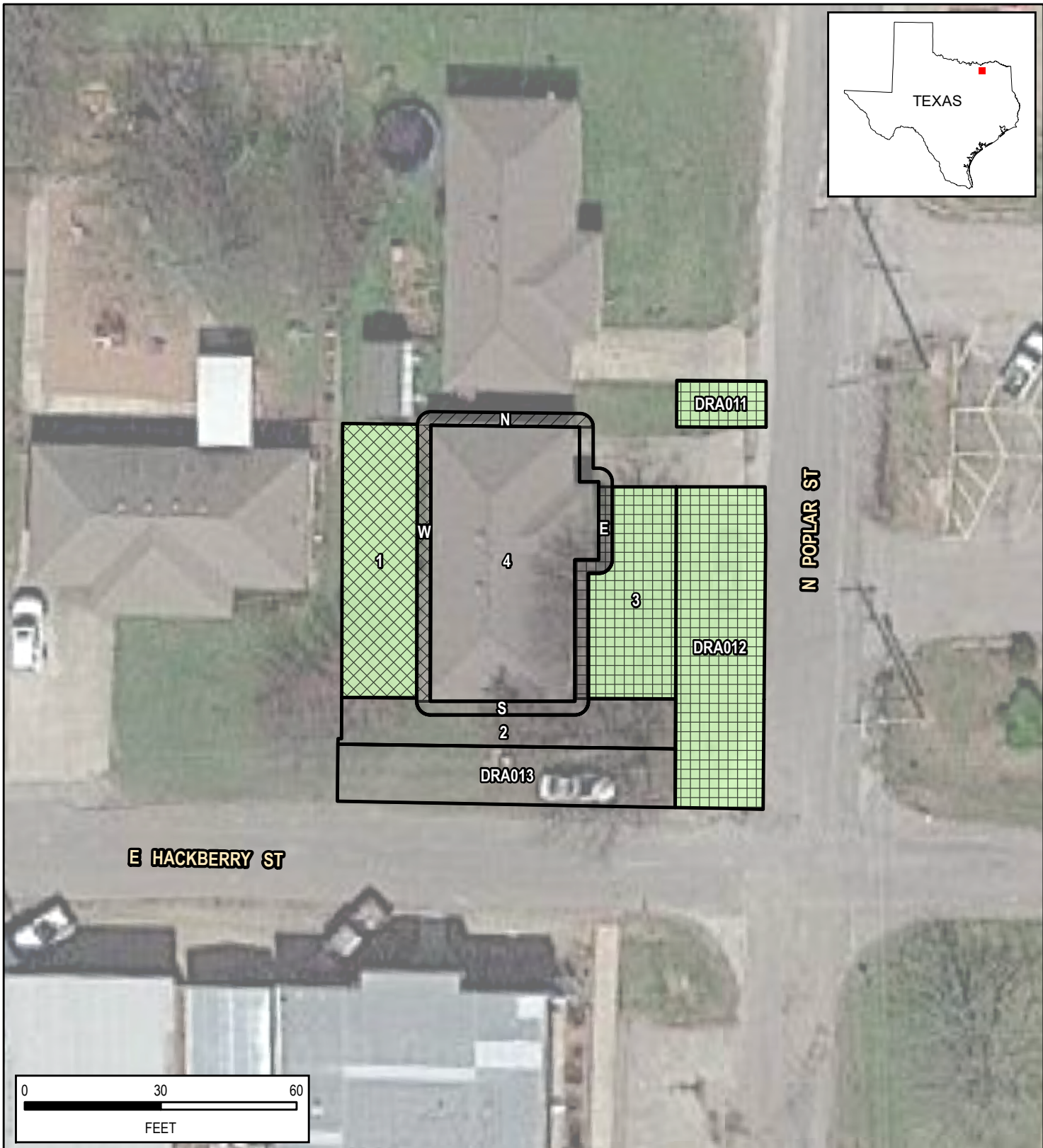
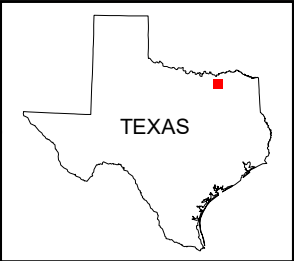
U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the cleanup level for the specific sample analyte**







### LEGEND

- Sample Grid (DRA - Drainage Grid)
- Sample Less Than EPA Action Level (See Table)
- Sample Exceeds EPA Action Level (See Table)

### Excavation Depth (Inches BGS)

- 0"
- 6"
- 12"
- 14"

SOURCE: © GOOGLE EARTH, 2018  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

BGS - Below Ground Surface



**USEPA REGION 6**

**PROPERTY FJD09**

**(b) (6)**

**ASSESSMENT MAP**

**FJ DOYLE SALVAGE REMOVAL  
LEONARD, FANNIN COUNTY, TEXAS**

DATE  
JUNE 2019

PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN

Removal Table  
Soil Analytical Data  
Confirmation Sample Results - (b) (6) - FJD09  
Leonard, Fannin County, Texas

Analyte					Aroclors	Total PCBs	Metals	Arsenic	Cobalt	Copper	Lead	Manganese	SVOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
CAS.NO						GCSV-07-1		7440-38-2	7440-48-4	7440-50-8	7439-92-1	7439-96-5		56-55-3	50-32-8	205-99-2	53-70-3	193-39-5
Units						mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site Specific Cleanup Levels						1		20	23	3100	400	1800		11	1.1	11	1.1	11
Station	Sample ID	Depth	Date	Type		--		--	--	--	--	--		--	--	--	--	--
DRA11	DRA011-20181203-12-56	12"-12"	12/3/2018	FS		0.58		18.9	12.5 JL	193	36.1	1190		0.13	0.18	0.39	0.037	0.19
DRA12	DRA012-20181204-12-56	12"-12"	12/4/2018	FS		0 U		7.01	12.2	35.4 B	33.8	1180		0.056	0.057	0.091	0.0094	0.041
FJD09-01	FJD09-01-20181130-06-56	6"-6"	11/30/2018	FS		0 U		7.13	14.7 JL	20.2	37 JL	1540		0.0063	0.0066	0.012	0.0016 U	0.0053
FJD09-03	FJD09-03-20181204-12-56	12"-12"	12/4/2018	FS		0.56		6.49	12.7	19.8 B	23.3	1140		0.021	0.03	0.063	0.0091	0.036

Notes:

FS - Field Sample

FD - Field Duplicate

NP - Not Published

mg/kg - milligrams perkilogram.

" - Inches

H - High bias

J - The identification of the analyte is acceptable; the reported value is an estimate

K - Unknown bias

L - Low bias

Q - Detected below the quantitation limit

U - Analyte not detected

**Bold** - Value exceeds the detection limit for specific sample analyte

**Highlighted value exceeds the cleanup level for the specific sample analyte**



## **APPENDIX J**

**TDD NO. 0001/18-175**

TDD #: 0001/18-175  
Amendment #:  
Contract #: EP-S5-17-02

Performance Based : No

Misc 2 :

[illegible]

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

Vendor: WESTON SOLUTIONS, INC.

TDD #: 0001/18-175

Amendment #:

Contract #: EP-S5-17-02

**Project Officer:** Will LaBombard

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code:**

**Phone Number:** 214-665-7199

**Fax Number:**

**Contracting Officer Representative** Gary Moore

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code:**

**Phone Number:** 214-665-6609

**Fax Number:**

**Contract Specialist:** Michael J. Pheeny

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code:**

**Phone Number:** 214-665-2798

**Fax Number:**

**Contracting Officer:** Michael J. Pheeny

Electronically Signed by Michael J. Pheeny

10/04/2018

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code:**

**Phone Number:** 214-665-2798

**Fax Number:**

**Other Agency Official**

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code:**

**Phone Number:**

**Fax Number:**

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

TDD #: 0001/18-175  
Amendment # :  
Contract #: EP-S5-17-02

Vendor: WESTON SOLUTIONS, INC.

Description of Work: The initial funding ceiling for this TDD is set at \$185,000. When available, all TDD costs shall be invoiced against the oldest 6A00E or 6A00S task order funding.

The SSID for the site is 061D and shall be used on all forms, reports, emails, communications, and deliverables.

The contractor shall:

1. Prepare a removal support workplan which shall include post excavation sampling, air monitoring, documentation (written, photo, video), and waste tracking (coordinated with ERRS contractor), with estimated detailed project costs;
2. Prepare HASP for removal support activities to be conducted and coordinated with the ERRS Contractor;
3. Providing technical assistance to the OSC as maybe requested;
4. Preparing draft documents (ie. fact sheets, polreps, tables, etc);
5. Participating in meetings with state and local officials and the public;
6. Preparing final report documenting cleanup activities conducted by the team;

In addition, the contractor shall:

Attend Public Meeting,  
Brief OSC,  
Compile Press Clippings,  
Conduct Air Monitoring,  
Conduct Multimedia Sampling,  
Coordinate Activities w/other Agencies (Fed, St, Loc),  
Coordinate w/Federal, State and Local Officials,  
Document On-Site Activities,  
Monitor Cleanup Activities,  
Notify OSC of Recommendation,  
Prepare Draft After Action Report,  
Prepare Draft PolRep,  
Prepare Fact Sheet,  
Prepare Graphics/Charts,  
Prepare Report,  
Prepare Safety Plan,  
Prepare Sampling Plan,  
Prepare Site Sketch/Map,  
Prepare START Work Plan,  
Prepare Transmittals,  
Provide Chronology of Events,  
Provide Photo Documentation,  
Provide Video Documentation,  
Take Representative Samples per OSC direction,  
Prepare Maps and Sketches,  
Provide Analytical Services,  
Provide Graphics/Charts



U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733  
Vendor : WESTON SOLUTIONS, INC.

TDD # : 0001/18-175  
Amendment # : 001  
Contract # : EP-S5-17-02

TDD Title : F.J. Doyle Salvage Removal Action  
Purpose : INCREMENTAL FUNDING, ADD COR  
  
Priority : HIGH  
Overtime Authorized : Yes  
Invoice Unit :

Verbal Date :  
Start Date : 09/28/2018  
Completion Date : 06/28/2019  
Effective Date : 09/28/2018

SSID : 0600  
Project/Site Name : F.J. Doyle Salvage Removal Action  
Project Address : 905 N. Poplar St.  
County : Fannin  
City : Leonard  
State : TX  
Zip Code : 75452

Work Area : Response / Removal  
Work Area Code : RS  
Activity : Fund Lead Removal  
Activity Code : RV  
Operable Unit :  
Emergency Code :  
FPN :  
Performance Based : No

Authorized TDD Ceiling :	Amount	LOE (Hours)
Previous Action(s) :	\$0.00	0.00
This Action :	\$0.00	0.00
New Total :	\$0.00	0.00

Specific Elements :  
See Schedule

Description of Work :  
See Schedule

Region Specific :  
CERCLIS: TXD980865109  
Misc 2 :

Accounting and Appropriation Information:										SFO:
Line	Budget / FY	Approp	Budget	Program Element	Object Class	Site Project	Cost Org	DCN Line-ID	Funding Category	TDD Amount

--

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

Vendor: WESTON SOLUTIONS, INC.

TDD #: 0001/18-175  
Amendment #: 001  
Contract #: EP-S5-17-02

**Project Officer :** Will LaBombard

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code:**

**Phone Number :** 214-665-7199

**Fax Number :**

**Contracting Officer Representative** Gary Moore

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code :**

**Phone Number :** 214-665-6609

**Fax Number :**

**Contract Specialist:** Brian Delaney

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code :**

**Phone Number :** 214-665-7473

**Fax Number :**

**Contracting Officer :** Brian Delaney  
Electronically Signed by Brian Delaney

01/31/2019

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code :**

**Phone Number :** 214-665-7473

**Fax Number :**

**Other Agency Official**

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code :**

**Phone Number :**

**Fax Number :**

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

TDD #: 0001/18-175  
Amendment #: 001  
Contract #: EP-S5-17-02

Vendor: WESTON SOLUTIONS, INC.

**Specific Elements:**

Base ORIG - Provide -Removal Assistance As Described

**Description of Work:**

Amendment 001 - Increase the funding ceiling by \$15,000 (from \$185,000 to \$200,000) so that work can continue. Also, add OSC Nic Brescia as an alternate COR for the TDD.

Base ORIG - The initial funding ceiling for this TDD is set at \$185,000. When available, all TDD costs shall be invoiced against the oldest 6A00E or 6A00S task order funding.

The SSID for the site is 061D and shall be used on all forms, reports, emails, communications, and deliverables.

The contractor shall:

1. Prepare a removal support workplan which shall include post excavation sampling, air monitoring, documentation (written, photo, video), and waste tracking (coordinated with ERRS contractor), with estimated detailed project costs;
2. Prepare HASP for removal support activities to be conducted and coordinated with the ERRS Contractor;
3. Providing technical assistance to the OSC as maybe requested;
4. Preparing draft documents (ie. fact sheets, polreps, tables, etc);
5. Participating in meetings with state and local officials and the public;
6. Preparing final report documenting cleanup activities conducted by the team;

In addition, the contractor shall:

Attend Public Meeting,  
Brief OSC,  
Compile Press Clippings,  
Conduct Air Monitoring,  
Conduct Multimedia Sampling,  
Coordinate Activities w/other Agencies (Fed, St, Loc),  
Coordinate w/Federal, State and Local Officials,  
Document On-Site Activities,  
Monitor Cleanup Activities,  
Notify OSC of Recommendation,  
Prepare Draft After Action Report,  
Prepare Draft PolRep,  
Prepare Fact Sheet,  
Prepare Graphics/Charts,  
Prepare Report,  
Prepare Safety Plan,  
Prepare Sampling Plan,  
Prepare Site Sketch/Map,  
Prepare START Work Plan,  
Prepare Transmittals,  
Provide Chronology of Events,  
Provide Photo Documentation,  
Provide Video Documentation,  
Take Representative Samples per OSC direction,  
Prepare Maps and Sketches,  
Provide Analytical Services,  
Provide Graphics/Charts

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733  
Vendor : WESTON SOLUTIONS, INC.

TDD # : 0001/18-175  
Amendment # : 002  
Contract # : EP-S5-17-02

TDD Title : F.J. Doyle Salvage Removal Action  
Purpose : INCREMENTAL FUNDING  
  
Priority : HIGH  
Overtime Authorized : Yes  
Invoice Unit :

Verbal Date :  
Start Date : 09/28/2018  
Completion Date : 06/28/2019  
Effective Date : 09/28/2018

SSID : 0600  
Project/Site Name : F.J. Doyle Salvage Removal Action  
Project Address : 905 N. Poplar St.  
County : Fannin  
City : Leonard  
State : TX  
Zip Code : 75452

Work Area : Response / Removal  
Work Area Code : RS  
Activity : Fund Lead Removal  
Activity Code : RV  
Operable Unit :  
Emergency Code :  
FPN :  
Performance Based : No

Authorized TDD Ceiling :	Amount	LOE (Hours)
Previous Action(s) :	\$0.00	0.00
This Action :	\$0.00	0.00
New Total :	\$0.00	0.00

Specific Elements :  
See Schedule

Description of Work :  
See Schedule

Region Specific :  
CERCLIS: TXD980865109  
Misc 2 :

Accounting and Appropriation Information:										SFO:
Line	Budget / FY	Approp	Budget	Program Element	Object Class	Site Project	Cost Org	DCN Line-ID	Funding Category	TDD Amount

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U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

Vendor: WESTON SOLUTIONS, INC.

TDD #: 0001/18-175  
Amendment #: 002  
Contract #: EP-S5-17-02

**Project Officer :** Will LaBombard

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code:**

**Phone Number :** 214-665-7199

**Fax Number :**

**Contracting Officer Representative** Gary Moore

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code :**

**Phone Number :** 214-665-6609

**Fax Number :**

**Contract Specialist:** Brian Delaney

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code :**

**Phone Number :** 214-665-7473

**Fax Number :**

**Contracting Officer :** Brian Delaney  
Electronically Signed by Brian Delaney

03/22/2019

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code :**

**Phone Number :** 214-665-7473

**Fax Number :**

**Other Agency Official**

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Branch Mail Code :**

**Phone Number :**

**Fax Number :**

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

TDD #: 0001/18-175  
Amendment #: 002  
Contract #: EP-S5-17-02

Vendor: WESTON SOLUTIONS, INC.

**Specific Elements:**

Base ORIG - Provide -Removal Assistance As Described

**Description of Work:**

Amendment 002 - Increase the funding ceiling by \$15,000 (from \$200,000 to \$215,000) for completion of final work and removal report.

Amendment 001 - Increase the funding ceiling by \$15,000 (from \$185,000 to \$200,000) so that work can continue. Also, add OSC Nic Brescia as an alternate COR for the TDD.

Base ORIG - The initial funding ceiling for this TDD is set at \$185,000. When available, all TDD costs shall be invoiced against the oldest 6A00E or 6A00S task order funding.

The SSID for the site is 061D and shall be used on all forms, reports, emails, communications, and deliverables.

The contractor shall:

1. Prepare a removal support workplan which shall include post excavation sampling, air monitoring, documentation (written, photo, video), and waste tracking (coordinated with ERRS contractor), with estimated detailed project costs;
2. Prepare HASP for removal support activities to be conducted and coordinated with the ERRS Contractor;
3. Providing technical assistance to the OSC as maybe requested;
4. Preparing draft documents (ie. fact sheets, polreps, tables, etc);
5. Participating in meetings with state and local officials and the public;
6. Preparing final report documenting cleanup activities conducted by the team;

In addition, the contractor shall:

Attend Public Meeting,  
Brief OSC,  
Compile Press Clippings,  
Conduct Air Monitoring,  
Conduct Multimedia Sampling,  
Coordinate Activities w/other Agencies (Fed, St, Loc),  
Coordinate w/Federal, State and Local Officials,  
Document On-Site Activities,  
Monitor Cleanup Activities,  
Notify OSC of Recommendation,  
Prepare Draft After Action Report,  
Prepare Draft PolRep,  
Prepare Fact Sheet,  
Prepare Graphics/Charts,  
Prepare Report,  
Prepare Safety Plan,  
Prepare Sampling Plan,  
Prepare Site Sketch/Map,  
Prepare START Work Plan,  
Prepare Transmittals,  
Provide Chronology of Events,  
Provide Photo Documentation,  
Provide Video Documentation,  
Take Representative Samples per OSC direction,  
Prepare Maps and Sketches,  
Provide Analytical Services,  
Provide Graphics/Charts

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733  
Vendor : WESTON SOLUTIONS, INC.

TDD # : 0001/18-175  
Amendment # : 003  
Contract # : EP-S5-17-02

TDD Title : F.J. Doyle Salvage Removal Action  
Purpose : INCREMENTAL FUNDING  
  
Priority : HIGH  
Overtime Authorized : Yes  
Invoice Unit :

Verbal Date :  
Start Date : 09/28/2018  
Completion Date : 09/30/2019  
Effective Date : 09/28/2018

SSID : 0600  
Project/Site Name : F.J. Doyle Salvage Removal Action  
Project Address : 905 N. Poplar St.  
County : Fannin  
City : Leonard  
State : TX  
Zip Code : 75452

Work Area : Response / Removal  
Work Area Code : RS  
Activity : Fund Lead Removal  
Activity Code : RV  
Operable Unit :  
Emergency Code :  
FPN :  
Performance Based : No

Authorized TDD Ceiling :	Amount	LOE (Hours)
Previous Action(s) :	\$0.00	0.00
This Action :	\$0.00	0.00
New Total :	\$0.00	0.00

Specific Elements :  
See Schedule

Description of Work :  
See Schedule

Region Specific :  
CERCLIS: TXD980865109  
Misc 2 :

Accounting and Appropriation Information:										SFO:
Line	Budget / FY	Approp	Budget	Program Element	Object Class	Site Project	Cost Org	DCN Line-ID	Funding Category	TDD Amount

--

U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

Vendor: WESTON SOLUTIONS, INC.

TDD #: 0001/18-175  
Amendment #: 003  
Contract #: EP-S5-17-02

<b>Project Officer :</b> Will LaBombard  _____ (Signature) _____ (Date)	<b>Branch Mail Code :</b> <b>Phone Number :</b> 214-665-7199 <b>Fax Number :</b>
<b>Contracting Officer Representative</b> Gary Moore  _____ (Signature) _____ (Date)	<b>Branch Mail Code :</b> <b>Phone Number :</b> 214-665-6609 <b>Fax Number :</b>
<b>Contract Specialist:</b> Brian Delaney  _____ (Signature) _____ (Date)	<b>Branch Mail Code :</b> <b>Phone Number :</b> 214-665-7473 <b>Fax Number :</b>
<b>Contracting Officer :</b> Brian Delaney Electronically Signed by Brian Delaney 06/03/2019 _____ (Signature) _____ (Date)	<b>Branch Mail Code :</b> <b>Phone Number :</b> 214-665-7473 <b>Fax Number :</b>
<b>Other Agency Official</b>  _____ (Signature) _____ (Date)	<b>Branch Mail Code :</b> <b>Phone Number :</b> <b>Fax Number :</b>



U.S. EPA, Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

TDD #: 0001/18-175  
Amendment #: 003  
Contract #: EP-S5-17-02

Vendor: WESTON SOLUTIONS, INC.

**Specific Elements:**

Base ORIG - Provide -Removal Assistance As Described

**Description of Work:**

Amendment 003 - Increase the funding ceiling by \$10,000 (from \$215,000 to \$225,000) for completion of final work and removal report.

Amendment 002 - Increase the funding ceiling by \$15,000 (from \$200,000 to \$215,000) for completion of final work and removal report.

Amendment 001 - Increase the funding ceiling by \$15,000 (from \$185,000 to \$200,000) so that work can continue. Also, add OSC Nic Brescia as an alternate COR for the TDD.

Base ORIG - The initial funding ceiling for this TDD is set at \$185,000. When available, all TDD costs shall be invoiced against the oldest 6A00E or 6A00S task order funding.

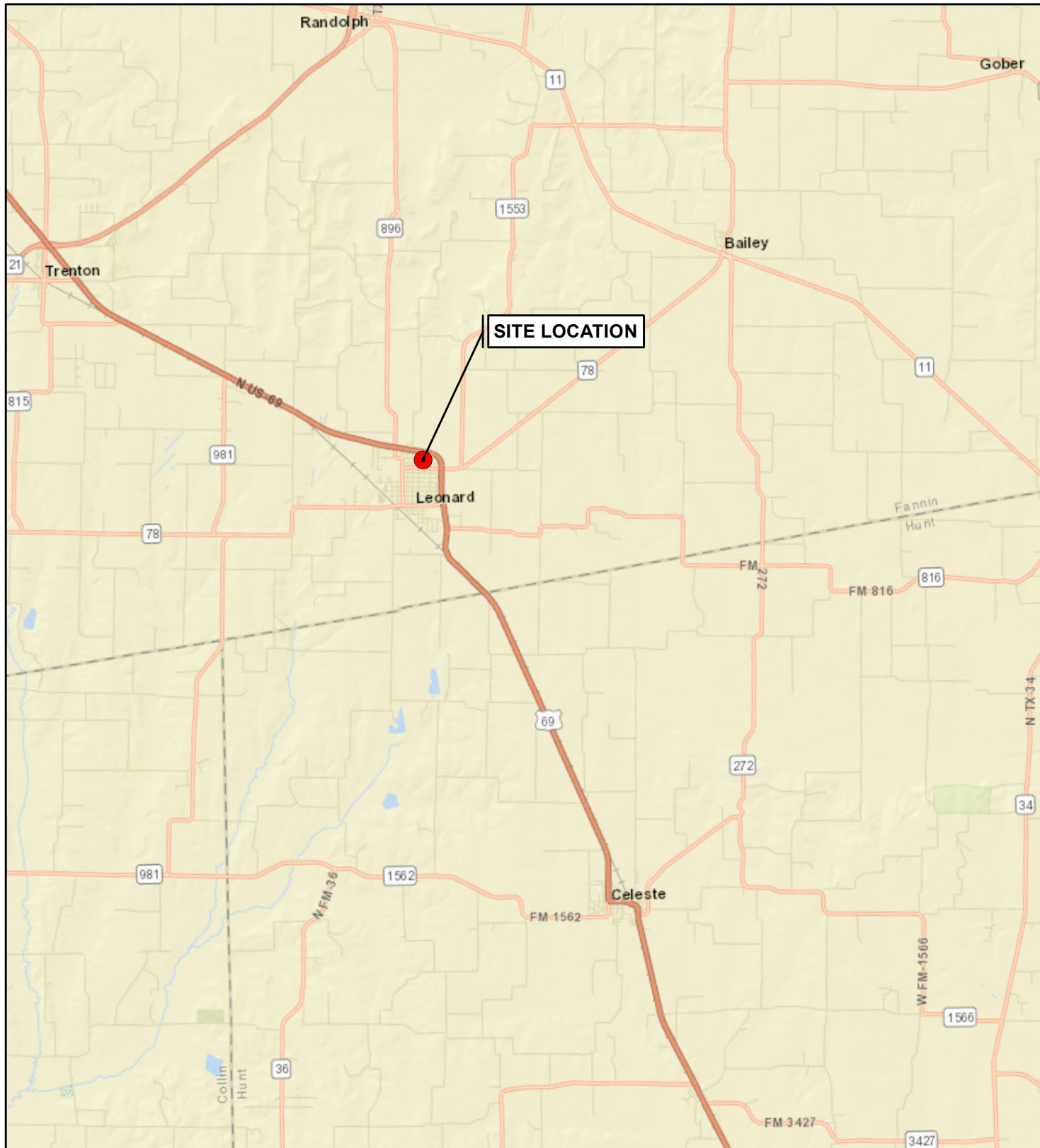
The SSID for the site is 061D and shall be used on all forms, reports, emails, communications, and deliverables.

The contractor shall:

1. Prepare a removal support workplan which shall include post excavation sampling, air monitoring, documentation (written, photo, video), and waste tracking (coordinated with ERRS contractor), with estimated detailed project costs;
2. Prepare HASP for removal support activities to be conducted and coordinated with the ERRS Contractor;
3. Providing technical assistance to the OSC as maybe requested;
4. Preparing draft documents (ie. fact sheets, polreps, tables, etc);
5. Participating in meetings with state and local officials and the public;
6. Preparing final report documenting cleanup activities conducted by the team;

In addition, the contractor shall:

Attend Public Meeting,  
Brief OSC,  
Compile Press Clippings,  
Conduct Air Monitoring,  
Conduct Multimedia Sampling,  
Coordinate Activities w/other Agencies (Fed, St, Loc),  
Coordinate w/Federal, State and Local Officials,  
Document On-Site Activities,  
Monitor Cleanup Activities,  
Notify OSC of Recommendation,  
Prepare Draft After Action Report,  
Prepare Draft PolRep,  
Prepare Fact Sheet,  
Prepare Graphics/Charts,  
Prepare Report,  
Prepare Safety Plan,  
Prepare Sampling Plan,  
Prepare Site Sketch/Map,  
Prepare START Work Plan,  
Prepare Transmittals,  
Provide Chronology of Events,  
Provide Photo Documentation,  
Provide Video Documentation,  
Take Representative Samples per OSC direction,  
Prepare Maps and Sketches,  
Provide Analytical Services,  
Provide Graphics/Charts



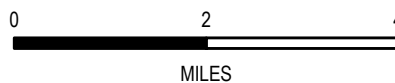
#### LEGEND

- Site Location



SOURCE: © ESRI STREETMAP USA, 2018

TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



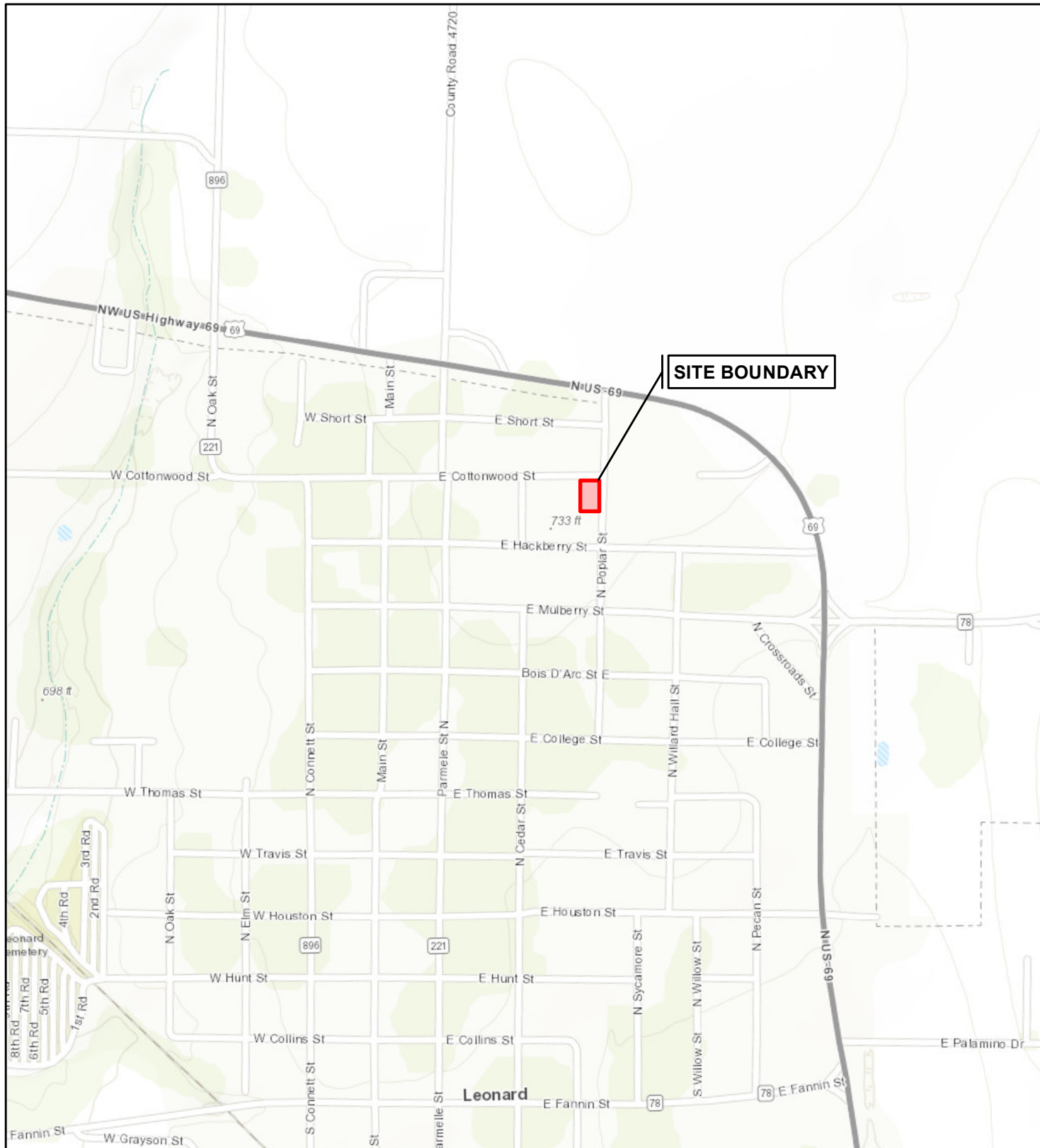
**USEPA REGION 6**

**FIGURE 1-1**  
**SITE LOCATION MAP**  
F.J. DOYLE SITE  
905 NORTH POPLAR STREET  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
AUGUST 2019

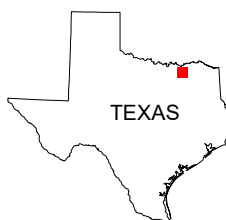
PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN



## LEGEND

Site Boundary



SOURCE: WORLD TOPOGRAPHIC MAP; ESRI

TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

0 800 1,600  
FEET



**USEPA REGION 6**

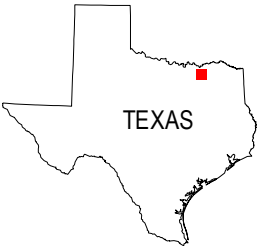
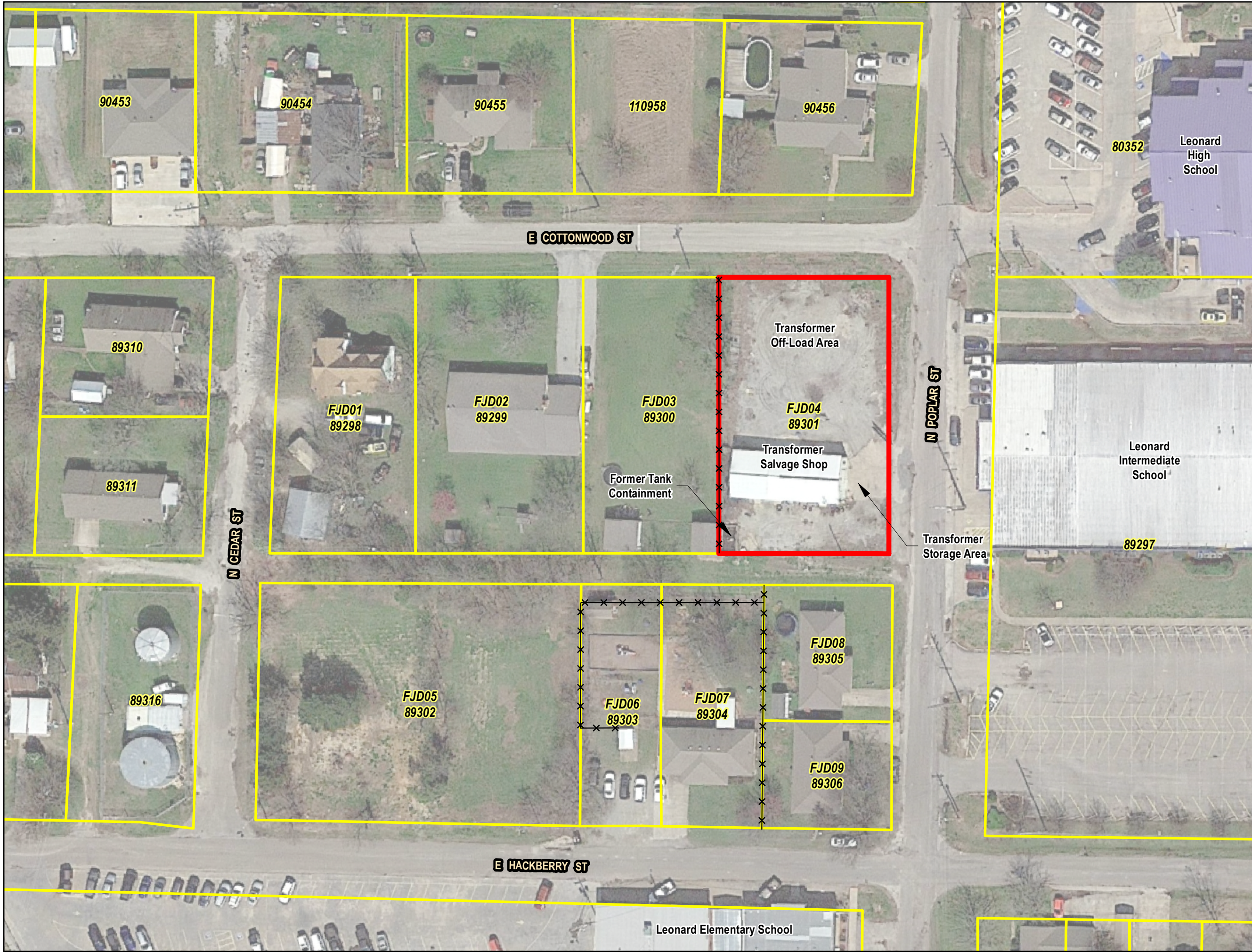
**FIGURE 2-1**  
**SITE AREA MAP**  
F.J. DOYLE SITE  
905 NORTH POPLAR STREET  
LEONARD, FANNIN COUNTY, TEXAS

DATE  
AUGUST 2019

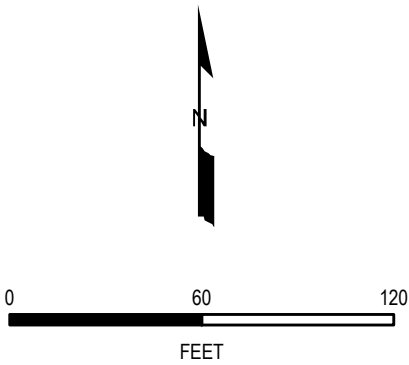
PROJECT NO  
20600.012.001.1175

SCALE  
AS SHOWN





- LEGEND**
- X— Fence Line
  - Site Boundary
  - Parcel Boundary with ID



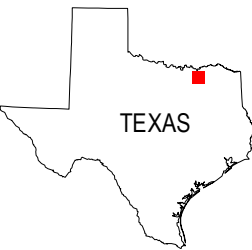
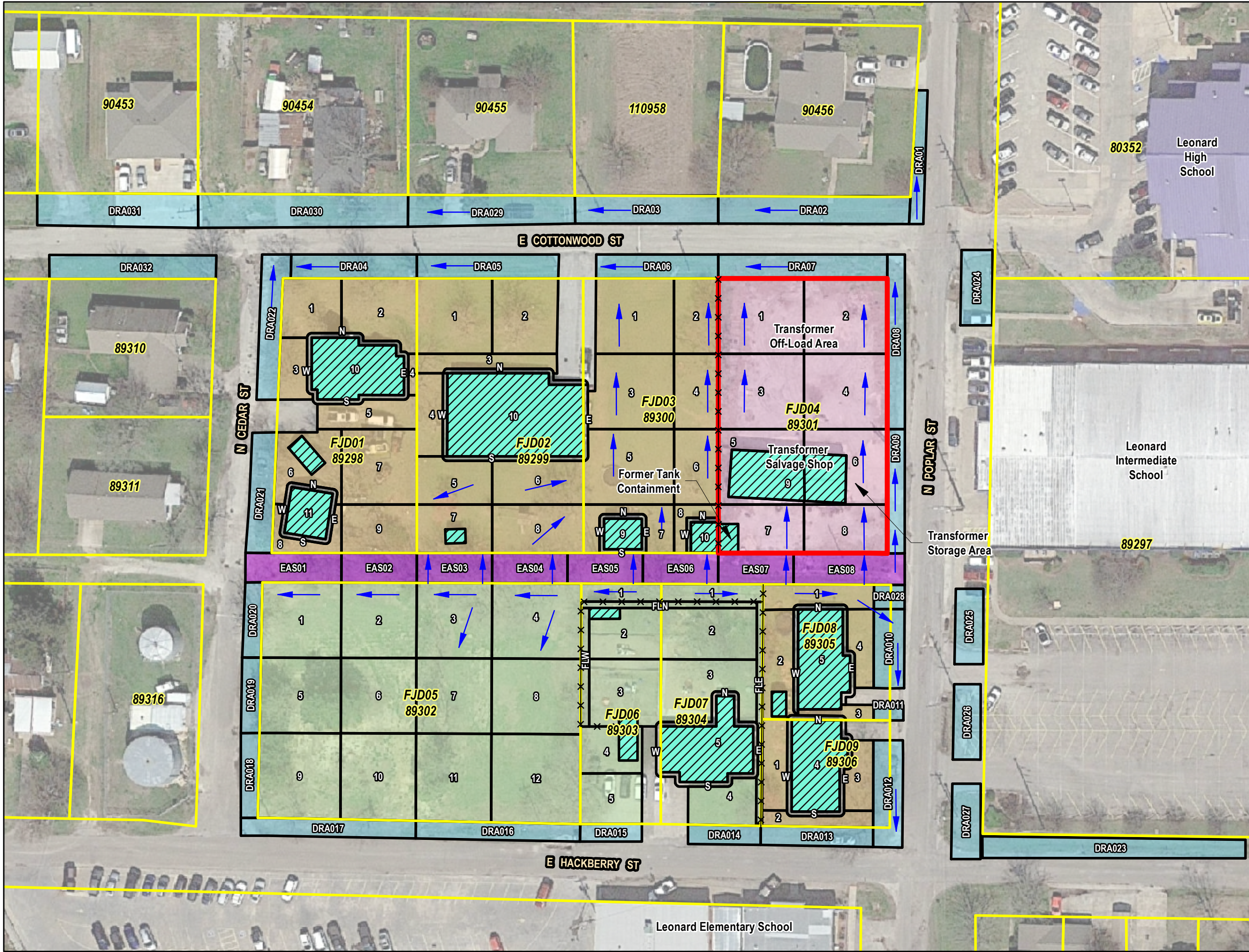
SOURCE: © GOOGLE EARTH, 2017  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



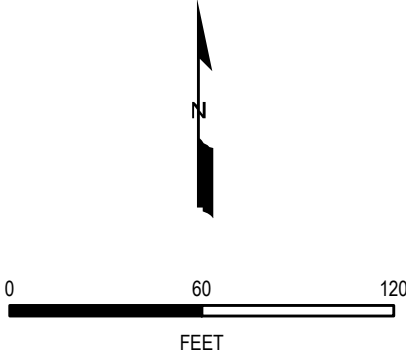
**FIGURE 2-2**  
**SITE LAYOUT MAP**  
F.J. DOYLE SITE  
905 NORTH POPLAR STREET  
LEONARD, FANNIN COUNTY, TEXAS

DATE AUGUST 2019	PROJECT NO 20600.012.001.1175	SCALE AS SHOWN
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- LEGEND**
- Surface Water Drainage Flow Direction
  - Fence Line
  - Site Boundary
  - Parcel Boundary with ID
  - Structure
- Sample Grid**
- Easement Grid
  - Site Grid
  - Drainage Grid
  - Residential Grid
  - Leonard ISD Grid



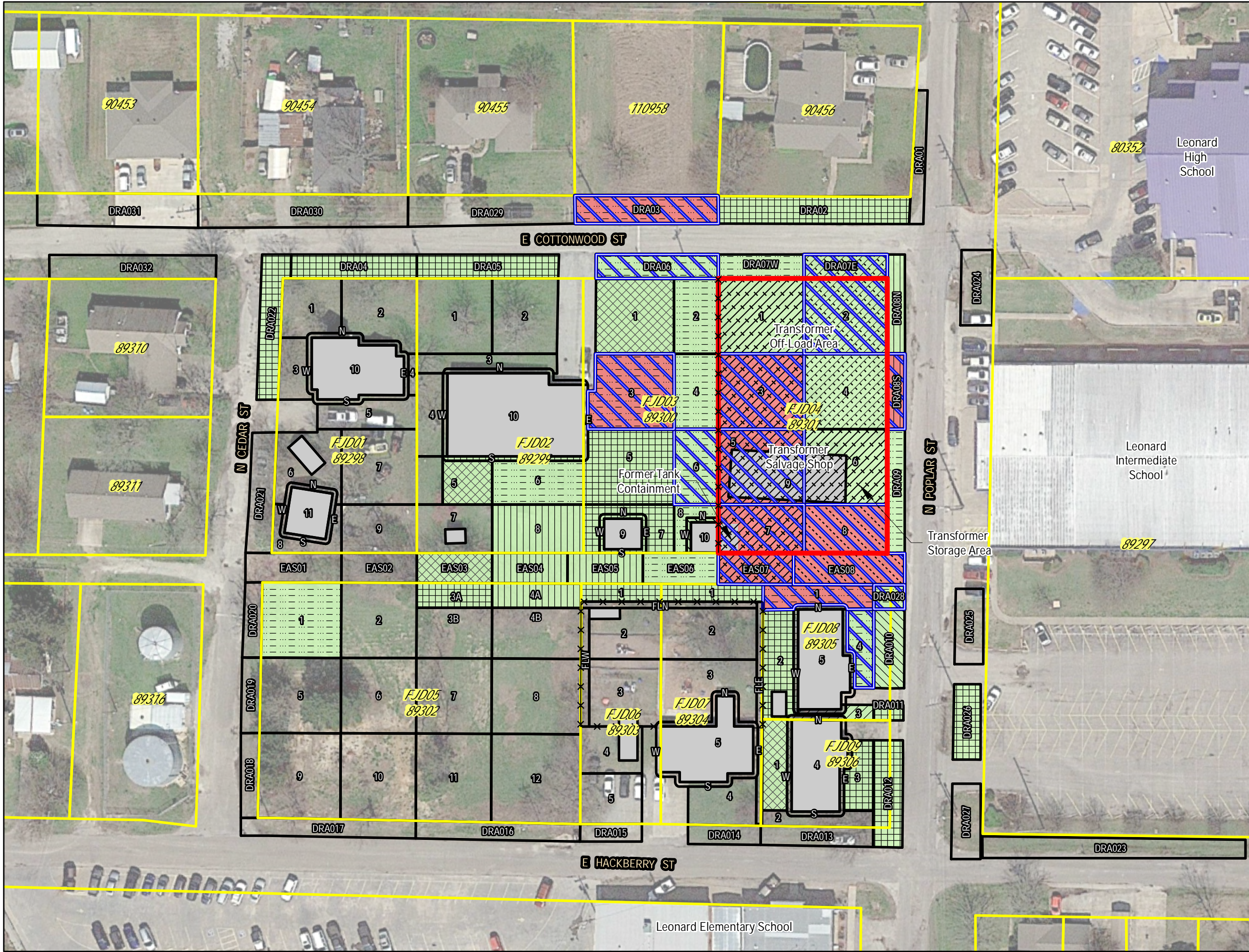
SOURCE: © GOOGLE EARTH, 2017  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D



**FIGURE 2-3**  
**SAMPLE GRID MAP**  
F.J. DOYLE SITE  
905 NORTH POPLAR STREET  
LEONARD, FANNIN COUNTY, TEXAS

DATE	PROJECT NO	SCALE
AUGUST 2019	20600.012.001.1175	AS SHOWN





TEXAS

LEGEND

- ✂ Fence Line
- ▭ Site Boundary
- ▭ Parcel Boundary with ID
- ▭ Structure
- ▭ Sample Grid
- ▭ Geotextile Liner Installed
- ▭ Sample Less Than EPA Action Level (See Table)
- ▭ Sample Exceeds EPA Action Level (See Table)

Depth in Inches (BGS)

▭ 0"	▭ 16"	▭ 36"
▭ 6"	▭ 18"	▭ 46"
▭ 12"	▭ 24"	▭ 48"
▭ 14"	▭ 30"	

NOTE:  
1. BGS - Below Ground Surface

0 60 120  
FEET

SOURCE: © GOOGLE EARTH, 2017  
TDD: 0001/18-175  
SEMS: TXD980865109  
SSID: 061D

USEPA REGION 6

FIGURE 3-1  
REMOVAL EXCAVATION MAP  
F.J. DOYLE SITE  
905 NORTH POPLAR STREET  
LEONARD, FANNIN COUNTY, TEXAS

DATE AUGUST 2019	PROJECT NO 20600.012.001.1175	SCALE AS SHOWN
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Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	DRA02	DRA022	DRA03	DRA03	DRA03	DRA04	DRA05	DRA06
				Sample ID	DRA02-20190109-12-56	DRA022-20190114-12-56	DRA03-20190109-12-56	DRA03-20190109-12-57	DRA03-20190115-24-56	DRA04-20190201-12-56	DRA05-20190201-12-56	DRA06-20181115-12-56
				Depth	12"-12"	12"-12"	12"-12"	12"-12"	24"-24"	12"-12"	12"-12"	12"-12"
				Date	1/9/2019	1/14/2019	1/9/2019	1/9/2019	1/15/2019	2/1/2019	2/1/2019	11/15/2018
				Type	FS	FS	FS	FD	FS	FS	FS	FS
Aroclors												
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	0.038	0.033	30 JK	8.6 JK	4.3	0.1	0.041	0.004 U
Total PCBs	GCSV-07-1	mg/Kg	<1	--	0.038	0.033	30 JK	8.6 JK	4.3	0.1	0.041	0 U
Metals												
Arsenic	7440-38-2	mg/Kg	<20	--	8.73	4.91	8.85	8.39	5.37	3.42	18.8	21.3
Cobalt	7440-48-4	mg/Kg	<23	--	12.7	6.85	12.9	15	9.96	4.54	9.01	11.2
Copper	7440-50-8	mg/Kg	<3100	--	23	10.9	17.6	17	10.9	13.5	125	776
Lead	7439-92-1	mg/Kg	<400	--	25.4	55.7	24.3	22.1	12.9	6.49	61.4	79.9
Manganese	7439-96-5	mg/Kg	<1800	--	1660	1220	1830	2150	1410	932	1570	1370
SVOCs												
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0022 JQ	0.0032 JQ	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.0022 JQ	0.0043 JQ	0.0015 JQ	0.0017 JQ	0.001 U	0.001 U	0.001 U	0.0021 JQ
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0025 JQ	0.0051	0.0012 U	0.0031 JQ	0.0072	0.0012 U	0.0012 U	0.0029 JQ
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0019 JQ	0.0032 JQ	0.0008 U	0.0013 JQ	0.0008 U	0.0008 U	0.0008 U	0.0021 JQ

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level



Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	DRA06	DRA06	DRA07E	DRA07E	DRA07W	DRA08N	DRA08S	DRA08S
				Sample ID	DRA06-20181115-12-57	DRA06-20181205-24-56	DRA07E-20190213-48-56	DRA07E-20190213-48-57	DRA07W-20190201-24-56	DRA08N-20190213-18-56	DRA08S-20190205-18-56	DRA08S-20190205-18-57
				Depth	12"-12"	24"-24"	48"-48"	48"-48"	24"-24"	18"-18"	18"-18"	18"-18"
				Date	11/15/2018	12/5/2018	2/13/2019	2/13/2019	2/1/2019	2/13/2019	2/5/2019	2/5/2019
				Type	FD	FS	FS	FD	FS	FS	FS	FD
Aroclors												
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0092 JQ	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	0.004 U	0.067	0.068	0.077	0.045	0.017 JQ	0.087	0.085
Total PCBs	GCSV-07-1	mg/Kg	<1	--	0 U	0.067	0.0772	0.079	0.045	0.018	0.087	0.085
Metals												
Arsenic	7440-38-2	mg/Kg	<20	--	17.4	7.69	5.93	5.01	3.46	5.64	5.75	5.49
Cobalt	7440-48-4	mg/Kg	<23	--	8.37	7.91	6.27	5.24	4.25	10.1	14.2	13.4
Copper	7440-50-8	mg/Kg	<3100	--	1240	18.7	8.95	6.85	10.7	24.5	20.1	19.6
Lead	7439-92-1	mg/Kg	<400	--	108	7.79	7.81	5.46	5.86	20	23.6	20.9
Manganese	7439-96-5	mg/Kg	<1800	--	1130	1110	1100	1160	1300	1070	2250	2110
SVOCs												
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.049	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.001 U	0.06	0.001 U	0.001 U	0.001 U	0.001 U	0.0014 JQ	0.001 U
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0012 U	0.078	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0026 JQ	0.0012 U
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.011	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0008 U	0.053	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level

H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit





Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	DRA09	DRA10	DRA11	DRA12	DRA26	DRA28	DRA28	EAS03
				Sample ID	DRA09-20190117-24-56	DRA010-20181203-16-56	DRA011-20181203-12-56	DRA012-20181204-12-56	DRA26-20190107-12-56	DRA028-20181212-16-56	DRA028-20181217-24-56	EAS03-20181115-06-56
				Depth	24"-24"	16"-16"	12"-12"	12"-12"	12"-12"	16"-16"	24"-24"	6"-6"
				Date	1/17/2019	12/3/2018	12/3/2018	12/4/2018	1/7/2019	12/12/2018	12/17/2018	11/15/2018
				Type	FS	FS	FS	FS	FS	FS	FS	FS
Aroclors												
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	0.045	0.8	0.58	0.004 U	0.029	0.42	0.039	0.047
Total PCBs	GCSV-07-1	mg/Kg	<1	--	0.045	0.8	0.58	0 U	0.029	0.42	0.039	0.047
Metals												
Arsenic	7440-38-2	mg/Kg	<20	--	5.94	9.48	18.9	7.01	7.15	6.71	6.69	8.62
Cobalt	7440-48-4	mg/Kg	<23	--	11.7	13.3 JL	12.5 JL	12.2	8.96	16.1	12.9	7.45
Copper	7440-50-8	mg/Kg	<3100	--	22.5	97.2	193	35.4 B	46.8	50.1	35.5	68.7
Lead	7439-92-1	mg/Kg	<400	--	19	35.5	36.1	33.8	28.6	31.8	25.8 JH	64.2
Manganese	7439-96-5	mg/Kg	<1800	--	835	1240	1190	1180	950	2480	1280 JK	1290
SVOCs												
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.033	0.13	0.056	0.12	0.0052	0.0075	0.0055
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.0019 JQ	0.046	0.18	0.057	0.19	0.0077	0.0062	0.0055
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0022 JQ	0.094	0.39	0.091	0.3	0.014	0.0099 JH	0.0088
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.013	0.037	0.0094	0.035	0.0042 JQ	0.0024 JQ	0.0077
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0008 U	0.06	0.19	0.041	0.18	0.0083	0.0056	0.0085

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level

H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limi



Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	EAS04	EAS04	EAS05	EAS05	EAS06	EAS06	EAS07	EAS07
				Sample ID	EAS04-20181119-12-56	EAS04-20181130-18-56	EAS05-20181119-12-56	EAS05-20181203-18-56	EAS06-20181217-24-56	EAS06-20181217-24-57	EAS07-20190107-36-56	EAS07-20190115-36-56
				Depth	12"-12"	18"-18"	12"-12"	18"-18"	24"-24"	24"-24"	36"-36"	36"-36"
				Date	11/19/2018	11/30/2018	11/19/2018	12/3/2018	12/17/2018	12/17/2018	1/7/2019	1/15/2019
				Type	FS	FS	FS	FS	FS	FD	FS	FS
Aroclors												
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	2.9	0.079	0.71	0.051	0.0089 JQ	0.045	9.3	4.8
Total PCBs	GCSV-07-1	mg/Kg	<1	--	2.9	0.079	0.71	0.051	0.0089	0.045	9.3	4.8
Metals												
Arsenic	7440-38-2	mg/Kg	<20	--	8.9	7.52	10	5.89	4.84	4.61	6.07	5.09
Cobalt	7440-48-4	mg/Kg	<23	--	10.2	7.3 JL	11.7	7.07 JL	7.03	7.39	25.5	9.33
Copper	7440-50-8	mg/Kg	<3100	--	265	19.3	95.5	16.8	11.3	12.9	50.6	24.8
Lead	7439-92-1	mg/Kg	<400	--	31.7 JL	10.9 JL	35.7 JL	12.9	13.2 JH	12.7 JH	25.3	17.7
Manganese	7439-96-5	mg/Kg	<1800	--	2030	1190	2220	1080	434 JK	1510 JK	5920	1140
SVOCs												
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.0031 JQ	0.0029 JQ	0.0048	0.0016 U	0.011	0.003 JQ	0.0044
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.001 U	0.002 JQ	0.0029 JQ	0.0033 JQ	0.001 U	0.0057	0.003 JQ	0.0039 JQ
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0023 JQ	0.0033 JQ	0.004 JQ	0.0058	0.0019 JQK	0.017 JK	0.0034 JQ	0.0057
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0016 U	0.0025 JQ	0.0016 U	0.0016 U	0.0022 JQ	0.0016 U	0.0016 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0008 U	0.0019 JQ	0.0036 JQ	0.0018 JQ	0.0008 U	0.0066	0.0024 JQ	0.0025 JQ

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level

H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit



Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	EAS08	EAS08	FJD02-05B	FJD02-06	FJD02-06	FJD02-06	FJD02-06	FJD02-08	FJD02-08
				Sample ID	EAS08-20190107-36-56	EAS08-20190114-46-56	FJD02-05B-20181115-06-56	FJD02-06-20181115-06-56	FJD02-06-20181128-12-56	FJD02-06-20181203-24-56	FJD02-08-20181119-12-56	FJD02-08-20181130-18-56	
				Depth	36"-36"	46"-46"	6"-6"	6"-6"	12"-12"	24"-24"	12"-12"	18"-18"	
				Date	1/7/2019	1/14/2019	11/15/2018	11/15/2018	11/28/2018	12/3/2018	11/19/2018	11/30/2018	
				Type	FS	FS	FS	FS	FS	FS	FS	FS	FS
Aroclors													
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	32	25	0.004 U	0.004 U	0.004 U	0.004 U	0.18	0.004 U	0.004 U
Total PCBs	GCSV-07-1	mg/Kg	<1	--	32	25	0 U	0 U	0 U	0 U	0.18	0 U	0 U
Metals													
Arsenic	7440-38-2	mg/Kg	<20	--	5.5	8.72	14.9	25.5	44.9	5.71	28.1	9.48	9.48
Cobalt	7440-48-4	mg/Kg	<23	--	11.2	17.6	7.83	11.1	12.2 JL	6.5 JL	6.6	5.62 JL	5.62 JL
Copper	7440-50-8	mg/Kg	<3100	--	27.9	257	82.4	359	62.3	7.4	355	12.5	12.5
Lead	7439-92-1	mg/Kg	<400	--	15.5	28.9	15.7	31.4	17.8	7.41	21.2 JL	6.88 JL	6.88 JL
Manganese	7439-96-5	mg/Kg	<1800	--	1850	2330	1100	1570	1900	718	1420	927	927
SVOCs													
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.014	0.0024 JQ	0.0016 U	0.0087	0.0016 U	0.0028 JQ	0.0016 U	0.0016 U
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.001 U	0.037	0.0023 JQ	0.001 U	0.0054	0.001 U	0.0029 JQ	0.001 U	0.001 U
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0025 JQ	0.067	0.0037 JQ	0.0012 U	0.011	0.0012 U	0.008	0.0012 U	0.0012 U
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0092	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0012 JQ	0.04	0.0012 JQ	0.0008 U	0.0061	0.0008 U	0.0044	0.0008 U	0.0008 U

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limi  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level



Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	FJD02-10S	FJD02-10S	FJD03-01	FJD03-02	FJD03-03	FJD03-03	FJD03-03
				Sample ID	FJD02-10S-20181115-12-56	FJD02-10S-20181128-18-56	FJD03-01-20181115-06-56	FJD03-02-20181119-24-56	FJD03-03-20181115-06-56	FJD03-03-20181128-12-56	FJD03-03-20181203-24-56
				Depth	12"-12"	18"-18"	6"-6"	24"-24"	6"-6"	12"-12"	24"-24"
				Date	11/15/2018	11/28/2018	11/15/2018	11/19/2018	11/15/2018	11/28/2018	12/3/2018
				Type	FS	FS	FS	FS	FS	FS	FS
Aroclors											
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	0.004 U	0.004 U	0.043	0.004 U	0.12	0.004 U	0.004 U
Total PCBs	GCSV-07-1	mg/Kg	<1	--	0 U	0 U	0.043	0 U	0.12	0 U	0 U
Metals											
Arsenic	7440-38-2	mg/Kg	<20	--	50.9	9.31	13.2	3.54	29.8	11.3	7.45
Cobalt	7440-48-4	mg/Kg	<23	--	12	12.2 J/L	12.3	4.08	13.7	15.3 J/L	21.6 J/L
Copper	7440-50-8	mg/Kg	<3100	--	29.6	24	129	4.53	471	69.5	13.6
Lead	7439-92-1	mg/Kg	<400	--	19.3	15.8	54.2	3.83 J/L	50	27.1	16.6
Manganese	7439-96-5	mg/Kg	<1800	--	1520	1450	1720	1330	1970	2020	3540
SVOCs											
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.013	0.0016 U	0.0016 U	0.0016 U	0.0046	0.0042
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.001 U	0.014	0.0013 J/Q	0.001 U	0.0018 J/Q	0.005	0.006
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0012 U	0.018	0.0022 J/Q	0.0012 U	0.0019 J/Q	0.011	0.0094
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0041	0.0016 U	0.0016 U	0.0016 U	0.0028 J/Q	0.013
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0008 U	0.015	0.0016 J/Q	0.0008 U	0.0014 J/Q	0.0043	0.013

Notes:  
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U - Analyte not detected  
H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level



Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	FJD03-04	FJD03-05	FJD03-05	FJD03-06	FJD03-07	FJD03-07	FJD03-07	FJD03-07
				Sample ID	FJD03-04-20181119-24-56	FJD03-05-20181119-06-56	FJD03-05-20181128-12-56	FJD03-06-20181219-24-56	FJD03-07-20181119-06-56	FJD03-07-20181119-06-57	FJD03-07-20181128-12-56	FJD03-07-20181128-12-57
				Depth	24"-24"	6"-6"	12"-12"	24"-24"	6"-6"	6"-6"	12"-12"	12"-12"
				Date	11/19/2018	11/19/2018	11/28/2018	12/19/2018	11/19/2018	11/19/2018	11/28/2018	11/28/2018
				Type	FS	FS	FS	FS	FS	FD	FS	FD
Aroclors												
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	0.004 U	0.45	0.004 U	0.072	5	20	0.024	0.004 U
Total PCBs	GCSV-07-1	mg/Kg	<1	--	0 U	0.45	0 U	0.072	5	20	0.024	0 U
Metals												
Arsenic	7440-38-2	mg/Kg	<20	--	5.12	10.1	7.2	4.49	8.69	10.3	10	6.59
Cobalt	7440-48-4	mg/Kg	<23	--	5.34	10.8	11.7 JL	7.52	6.12	7.63	9.14 JL	7.33 JL
Copper	7440-50-8	mg/Kg	<3100	--	9.49	106	31.8	9.27	2880	3180	2500	2490
Lead	7439-92-1	mg/Kg	<400	--	7.62 JL	21.7 JL	15.4	10	78.1 JL	96.4 JL	51.7	47.9
Manganese	7439-96-5	mg/Kg	<1800	--	1160	1960	1620	985	1120	1300	1020	1030
SVOCs												
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.0016 U	0.002 JQ	0.0016 U	0.0016 U	0.0034 JQ	0.002 JQ	0.0039 JQ
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.001 U	0.0014 JQ	0.0017 JQ	0.001 U	0.0016 JQ	0.0038 JQ	0.001 U	0.0023 JQ
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0012 U	0.0018 JQ	0.0022 JQ	0.0012 U	0.0029 JQ	0.0055	0.0012 U	0.0019 JQ
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0018 JQ	0.0011 JQ	0.0008 U	0.0008 U	0.0011 JQ	0.0032 JQ	0.0008 U	0.0008 U

Notes:  
FS - Field Sample  
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mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
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H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit



Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	FJD03-08	FJD03-09NSEW	FJD03-09NSEW	FJD03-10NW	FJD03-10NW	FJD04-01	FJD04-02
				Sample ID	FJD03-08-20181119-24-56	FJD03-09NSEW-20181120-06-56	FJD03-09NSEW-20181128-12-56	FJD03-10NW-20181120-24-56	FJD03-10NW-20181128-30-56	FJD04-01-20190201-36-56	FJD04-02-20190213-48-56
				Depth	24"-24"	6"-6"	12"-12"	24"-24"	30"-30"	36"-36"	48"-48"
				Date	11/19/2018	11/20/2018	11/28/2018	11/20/2018	11/28/2018	2/1/2019	2/13/2019
				Type	FS	FS	FS	FS	FS	FS	FS
Aroclors											
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.067	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	0.72 JH	1.7	0.004 U	29 JK	0.004 U	0.12	0.21
Total PCBs	GCSV-07-1	mg/Kg	<1	--	0.72	1.7	0 U	29	0 U	0.187	0.22
Metals											
Arsenic	7440-38-2	mg/Kg	<20	--	4.24	11.1	7.06	10.7	3.51	4.63	4.08
Cobalt	7440-48-4	mg/Kg	<23	--	4.16	7.04	7.23 JL	22.8	8.49 JL	7.07	6.12
Copper	7440-50-8	mg/Kg	<3100	--	49.5	421	2050 E	638	30.1	116	27.4
Lead	7439-92-1	mg/Kg	<400	--	8.5 JL	22	40	130	6.03	14.4	6.8
Manganese	7439-96-5	mg/Kg	<1800	--	841	965	939	2970	1230	1150	1310
SVOCs											
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.0016 U	0.0037 JQ	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.001 U	0.0038 JQ	0.001 U	0.0017 JQ	0.001 U	0.001 U	0.0016 JQ
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0018 JQ	0.0031 JQ	0.0012 U	0.0032 JQ	0.0012 U	0.0024 JQ	0.0023 JQ
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0014 JQ	0.0008 U	0.0008 U	0.0011 JQ	0.0008 U	0.0008 U	0.0017 JQ

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
**Bold** - Value exceeds the detection limit for specific sample analyte  
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H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit



Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	FJD04-03	FJD04-04	FJD04-05	FJD04-06	FJD04-07	FJD04-08	FJD05-01	FJD05-01
				Sample ID	FJD04-03-20190128-36-56	FJD04-04-20190205-48-56	FJD04-05-20190122-36-56	FJD04-06-20190122-36-56	FJD04-07-20190107-36-56	FJD04-08-20190114-46-56	FJD05-01-20190110-06-56	FJD05-01-20190118-24-56
				Depth	36"-36"	48"-48"	36"-36"	36"-36"	36"-36"	46"-46"	6"-6"	24"-24"
				Date	1/28/2019	2/5/2019	1/22/2019	1/22/2019	1/7/2019	1/14/2019	1/10/2019	1/18/2019
				Type	FS	FS	FS	FS	FS	FS	FS	FS
Aroclors												
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.41	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	3.1	0.029	2.1	0.034	2.7	7.7	0.004 U	0.004 U
Total PCBs	GCSV-07-1	mg/Kg	<1	--	3.1	0.029	2.51	0.034	2.7	7.7	0 U	0 U
Metals												
Arsenic	7440-38-2	mg/Kg	<20	--	4.98	4.45	7.75	6.48	3.22	6.17	65.8	15.6
Cobalt	7440-48-4	mg/Kg	<23	--	5.89	7.81	25.3	6.31	4.87	9.99	6.49	5.26
Copper	7440-50-8	mg/Kg	<3100	--	33.4 B	66.1	8.37	8.17	26.6	59.9	10.5	7.59
Lead	7439-92-1	mg/Kg	<400	--	11.8	12.4	8	6.71	7.42	17.1	27.8	7.19
Manganese	7439-96-5	mg/Kg	<1800	--	914	1070	841	1380	990	1480	1110	986
SVOCs												
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0025 JQ	0.0016 U	0.011	0.0016 U
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.001 U	0.001 U	0.001 U	0.001 U	0.0028 JQ	0.0014 JQ	0.013	0.001 U
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0034 JQ	0.0026 JQ	0.024	0.0012 U
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0041 JQ	0.0016 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.003 JQ	0.0021 JQ	0.016	0.0008 U

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level

H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit

Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	FJD05-03A	FJD05-03A	FJD05-04A	FJD05-04A	FJD06-01	FJD07-01	FJD08-01
				Sample ID	FJD05-03A-20181115-06-56	FJD05-03A-20181130-12-56	FJD05-04A-05-20181119-06-56	FJD05-04A-20181130-18-56	FJD06-01-20181120-12-56	FJD07-01-20181128-12-56	FJD08-01-20181205-12-56
				Depth	6"-6"	12"-12"	6"-6"	18"-18"	12"-12"	12"-12"	12"-12"
				Date	11/15/2018	11/30/2018	11/19/2018	11/30/2018	11/20/2018	11/28/2018	12/5/2018
				Type	FS	FS	FS	FS	FS	FS	FS
Aroclors											
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	0.14	0.004 U	0.19	0.004 U	0.004 U	0.004 U	0.004 U
Total PCBs	GCSV-07-1	mg/Kg	<1	--	0.14	0 U	0.19	0 U	0 U	0 U	0 U
Metals											
Arsenic	7440-38-2	mg/Kg	<20	--	23.6	11.1	6.9	9.62	5.7	6.96	7.27
Cobalt	7440-48-4	mg/Kg	<23	--	7.35	5.93 JL	9.96	7.16 JL	12.3	15.1 JL	17.8
Copper	7440-50-8	mg/Kg	<3100	--	86	12.2	51.6	18.8	28.4	26.6	24
Lead	7439-92-1	mg/Kg	<400	--	73.4	35.5 JL	34.4 JL	17.8 JL	34.1	23.8	29
Manganese	7439-96-5	mg/Kg	<1800	--	1380	1100	2010	1080	1710	1590	2050
SVOCs											
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0036 JQ	0.0027 JQ	0.0083	0.0016 U	0.0016 U	0.0016 U	0.028
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.0031 JQ	0.0026 JQ	0.0096	0.0014 JQ	0.001 U	0.0014 JQ	0.03
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0053	0.0045	0.011	0.0026 JQ	0.0017 JQ	0.0023 JQ	0.044
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0068
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0051	0.0021 JQ	0.0066	0.0021 JQ	0.0013 JQ	0.0008 U	0.027

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level





Table 3-1  
Soil Confirmation Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	Site Specific Cleanup Levels	Station	FJD08-01	FJD08-02	FJD08-03	FJD08-04	FJD08-04	FJD08-04	FJD09-01	FJD09-03
				Sample ID	FJD08-01-20181212-24-56	FJD08-02-20181130-12-56	FJD08-03-20181203-14-56	FJD08-04-20181203-14-56	FJD08-04-20181203-14-57	FJD08-04-20181212-24-56	FJD09-01-20181130-06-56	FJD09-03-20181204-12-56
				Depth	24"-24"	12"-12"	14"-14"	14"-14"	14"-14"	24"-24"	6"-6"	12"-12"
				Date	12/12/2018	11/30/2018	12/3/2018	12/3/2018	12/3/2018	12/12/2018	11/30/2018	12/4/2018
				Type	FS	FS	FS	FS	FD	FS	FS	FS
Aroclors												
Aroclor 1016	12674-11-2	mg/Kg	NP	--	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	NP	--	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U
Aroclor 1232	11141-16-5	mg/Kg	NP	--	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U	0.0045 U
Aroclor 1242	53469-21-9	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1248	12672-29-6	mg/Kg	NP	--	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U
Aroclor 1254	11097-69-1	mg/Kg	NP	--	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U
Aroclor 1260	11096-82-5	mg/Kg	NP	--	0.021	0.004 U	0.024	0.32	0.52	0.04	0.004 U	0.56
Total PCBs	GCSV-07-1	mg/Kg	<1	--	0.021	0 U	0.024	0.32	0.52	0.04	0 U	0.56
Metals												
Arsenic	7440-38-2	mg/Kg	<20	--	6.88	7.3	8.41	9.87	9.31	5.83	7.13	6.49
Cobalt	7440-48-4	mg/Kg	<23	--	20.4	22.4 JL	13.5 JL	20.2 JL	14.3 JL	14.7	14.7 JL	12.7
Copper	7440-50-8	mg/Kg	<3100	--	16.1	19.1	22.6	31.5	2370	15.9	20.2	19.8 B
Lead	7439-92-1	mg/Kg	<400	--	22.9	33.8 JL	34.8	32.6	30.6	21.9	37 JL	23.3
Manganese	7439-96-5	mg/Kg	<1800	--	3070	1740	1120	2020	1480	1690	1540	1140
SVOCs												
Benzo(a)anthracene	56-55-3	mg/Kg	<11	--	0.0016 U	0.0024 JQ	0.0047	0.0046	0.0082	0.0016 U	0.0063	0.021
Benzo(a)pyrene	50-32-8	mg/Kg	<1.1	--	0.0015 JQ	0.0028 JQ	0.0059	0.0064	0.01	0.001 U	0.0066	0.03
Benzo(b)fluoranthene	205-99-2	mg/Kg	<11	--	0.0028 JQ	0.006	0.0095	0.012	0.022	0.0012 U	0.012	0.063
Dibenz(a,h)anthracene	53-70-3	mg/Kg	<1.1	--	0.0016 U	0.0036 JQ	0.0022 JQ	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0091
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	<11	--	0.0014 JQ	0.0061	0.0052	0.0063	0.012	0.0008 U	0.0053	0.036

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed / Not applicable  
mg/Kg - milligrams per Kilogram.  
J - The identification of the analyte is acceptable; the reported value is an estimate  
U - Analyte not detected  
**Bold** -Value exceeds the detection limit for specific sample analyte  
**Highlighted value** exceeds the Site-Specific Cleanup Level

H - High bias  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit

Table 3-2  
Backfill Soil Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	RSL Summary 05/2018 Resident Soil	Site Specific Cleanup Levels	Station	BKFL	BKFL	BKFL
					Sample ID	FJD-BKFL- 20181114-51	FJD-SLST- 20181114-51	FJD-TPSL- 20181114-51
					Depth	6"-6"	6"-6"	6"-6"
					Date	11/14/2018	11/14/2018	11/14/2018
					Type	FS	FS	FS
Aroclors								
Aroclor 1016	12674-11-2	mg/Kg	4.1	NP	--	0.00483 U	0.00426 U	0.0042 U
Aroclor 1221	11104-28-2	mg/Kg	0.2	NP	--	0.00965 U	0.00851 U	0.0084 U
Aroclor 1232	11141-16-5	mg/Kg	0.17	NP	--	0.00617 U	0.00544 U	0.00537 U
Aroclor 1248	12672-29-6	mg/Kg	0.23	NP	--	0.00515 U	0.00453 U	0.00448 U
Aroclor 1254	11097-69-1	mg/Kg	0.24	NP	--	0.00442 U	0.00389 U	0.00384 U
Aroclor 1260	11096-82-5	mg/Kg	0.24	NP	--	0.00722 U	0.00636 U	0.00628 U
Aroclor 1268	11100-14-4	mg/Kg	NP	NP	--	0.0058 U	0.00511 U	0.00504 U
Aroclor-1242	53469-21-9	mg/Kg	0.23	NP	--	0.00429 U	0.00378 U	0.00373 U
Aroclor-1262	37324-23-5	mg/Kg	NP	NP	--	0.00656 U	0.00578 U	0.00571 U
Total PCBs	GCSV-07-1	mg/Kg	NP	<1	--	0 U	0 U	0 U
COC-Metals								
Arsenic	7440-38-2	mg/Kg	0.68	<20	--	2.76	2.78	1.73
Cobalt	7440-48-4	mg/Kg	23	<23	--	9.27	3.97	4.93
Copper	7440-50-8	mg/Kg	3100	<3100	--	10.5	3.68	4.19
Lead	7439-92-1	mg/Kg	400	<400	--	10.6	6.17	7.19
Manganese	7439-96-5	mg/Kg	1800	<1800	--	340	253	296
COC-SVOCs								
Benzo(a)anthracene	56-55-3	mg/Kg	1.1	<11	--	0.00934 U	0.00829 U	0.00824 U
Benzo(a)pyrene	50-32-8	mg/Kg	0.11	<1.1	--	0.0133 U	0.0118 U	0.0117 U
Benzo(b)fluoranthene	205-99-2	mg/Kg	1.1	<11	--	0.0169 U	0.015 U	0.0149 U
Dibenz(a,h)anthracene	53-70-3	mg/Kg	0.11	<1.1	--	0.0234 U	0.0208 U	0.0207 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/Kg	1.1	<11	--	0.0179 U	0.0159 U	0.0158 U
Herbicides								
2,4,5-T	93-76-5	mg/Kg	630	NP	--	0.00547 U	0.00482 U	0.00479 U
2,4,5-TP (Silvex)	93-72-1	mg/Kg	510	NP	--	0.00547 U	0.00482 U	0.00479 U
2,4'-D	94-75-7	mg/Kg	700	NP	--	0.00547 U	0.00482 U	0.00479 U
2,4-DB	94-82-6	mg/Kg	1900	NP	--	0.00547 U	0.00482 U	0.00479 U
Dalapon	75-99-0	mg/Kg	1900	NP	--	0.00547 U	0.00482 U	0.00479 U
Dicamba	1918-00-9	mg/Kg	1900	NP	--	0.00547 U	0.00482 U	0.00479 U
Dichloroprop	120-36-5	mg/Kg	NP	NP	--	0.00547 U	0.00482 U	0.00479 U
Dinoseb	88-85-7	mg/Kg	63	NP	--	0.00547 U	0.00482 U	0.00479 U
MCPA	94-74-6	mg/Kg	32	NP	--	0.547 U	0.482 U	0.479 U
MCPP	93-65-2	mg/Kg	63	NP	--	0.547 U	0.482 U	0.479 U
Pentachlorophenol	87-86-5	mg/Kg	1	NP	--	0.00547 U	0.00482 U	0.00479 U
Metals								
Aluminum	7429-90-5	mg/Kg	77000	NP	--	13500	5800	5160
Antimony	7440-36-0	mg/Kg	31	NP	--	0.25 U	0.23 U	0.221 U
Barium	7440-39-3	mg/Kg	15000	NP	--	162	64.2	70.2
Beryllium	7440-41-7	mg/Kg	160	NP	--	1.33	0.475	0.471
Cadmium	7440-43-9	mg/Kg	71	NP	--	0.125 U	0.115 U	0.111 U
Calcium	7440-70-2	mg/Kg	NP	NP	--	4470	1520	1110
Chromium	7440-47-3	mg/Kg	NP	NP	--	15.8	4.26	8.17
Iron	7439-89-6	mg/Kg	55000	NP	--	15200	5090	6580
Magnesium	7439-95-4	mg/Kg	NP	NP	--	3290	726	698
Mercury	7439-97-6	mg/Kg	11	NP	--	0.0063 U	0.0054 U	0.0061 J
Nickel	7440-02-0	mg/Kg	1500	NP	--	17.5	5.33	4.48
Potassium	7440-09-7	mg/Kg	NP	NP	--	1470	491	398
Selenium	7782-49-2	mg/Kg	390	NP	--	0.125 U	0.115 U	0.111 U
Silver	7440-22-4	mg/Kg	390	NP	--	0.125 U	0.115 U	0.111 U
Sodium	7440-23-5	mg/Kg	NP	NP	--	333	412	86.9
Thallium	7440-28-0	mg/Kg	0.78	NP	--	0.137 J	0.115 U	0.111 U
Vanadium	7440-62-2	mg/Kg	390	NP	--	23.2	12.5	16.2
Zinc	7440-66-6	mg/Kg	23000	NP	--	31.3	7.9 J	12.4
Pesticides								
4,4'-DDD	72-54-8	mg/Kg	1.9	NP	--	0.000352 U	0.00031 U	0.000308 U
4,4'-DDE	72-55-9	mg/Kg	2	NP	--	0.000365 U	0.000321 U	0.000319 U
4,4'-DDT	50-29-3	mg/Kg	1.9	NP	--	0.000443 U	0.00039 U	0.000388 U
Aldrin	309-00-2	mg/Kg	0.039	NP	--	0.000339 U	0.000298 U	0.000297 U
alpha-BHC	319-84-6	mg/Kg	0.086	NP	--	0.000313 U	0.000275 U	0.000274 U
alpha-Chlordane	5103-71-9	mg/Kg	NP	NP	--	0.000417 U	0.000367 U	0.000365 U
beta-BHC	319-85-7	mg/Kg	0.3	NP	--	0.000443 U	0.00039 U	0.000388 U
delta-BHC	319-86-8	mg/Kg	NP	NP	--	0.000326 U	0.000287 U	0.000285 U
Dieldrin	60-57-1	mg/Kg	0.034	NP	--	0.000274 U	0.000241 U	0.00024 U
Endosulfan I	959-98-8	mg/Kg	NP	NP	--	0.0003 U	0.000264 U	0.000262 U
Endosulfan II	33213-65-9	mg/Kg	NP	NP	--	0.0003 U	0.000264 U	0.000262 U
Endosulfan sulfate	1031-07-8	mg/Kg	NP	NP	--	0.000339 U	0.000298 U	0.000297 U



Table 3-2  
Backfill Soil Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	RSL Summary 05/2018 Resident Soil	Site Specific Cleanup Levels	Station	BKFL	BKFL	BKFL
					Sample ID	FJD-BKFL- 20181114-51	FJD-SLST- 20181114-51	FJD-TPSL- 20181114-51
					Depth	6"-6"	6"-6"	6"-6"
					Date	11/14/2018	11/14/2018	11/14/2018
					Type	FS	FS	FS
Endrin	72-20-8	mg/Kg	19	NP	--	0.00043 U	0.000379 U	0.000376 U
Endrin aldehyde	7421-93-4	mg/Kg	NP	NP	--	0.000469 U	0.000413 U	0.000411 U
Endrin ketone	53494-70-5	mg/Kg	NP	NP	--	0.000365 U	0.000321 U	0.000319 U
gamma-BHC (Lindane)	58-89-9	mg/Kg	0.57	NP	--	0.000313 U	0.000275 U	0.000274 U
gamma-Chlordane	5103-74-2	mg/Kg	NP	NP	--	0.000313 U	0.000275 U	0.000274 U
Heptachlor	76-44-8	mg/Kg	0.13	NP	--	0.000378 U	0.000333 U	0.000331 U
Heptachlor epoxide	1024-57-3	mg/Kg	0.07	NP	--	0.000495 U	0.000436 U	0.000433 U
Methoxychlor	72-43-5	mg/Kg	320	NP	--	0.000508 U	0.000448 U	0.000445 U
Toxaphene	8001-35-2	mg/Kg	0.49	NP	--	0.00543 U	0.00479 U	0.00476 U
Semi-volatiles								
1,2,4,5-Tetrachlorobenzene	95-94-3	mg/Kg	23	NP	--	0.0384 U	0.0341 U	0.0339 U
1,4-Dioxane	123-91-1	mg/Kg	5.3	NP	--	0.016 U	0.0142 U	0.0141 U
2,3,4,6-Tetrachlorophenol	58-90-2	mg/Kg	1900	NP	--	0.0595 U	0.0528 U	0.0525 U
2,4,5-Trichlorophenol	95-95-4	mg/Kg	6300	NP	--	0.0267 U	0.0237 U	0.0236 U
2,4,6-Trichlorophenol	88-06-2	mg/Kg	49	NP	--	0.0215 U	0.0191 U	0.0189 U
2,4-Dichlorophenol	120-83-2	mg/Kg	190	NP	--	0.0172 U	0.0153 U	0.0152 U
2,4-Dimethylphenol	105-67-9	mg/Kg	1300	NP	--	0.055 U	0.0488 U	0.0485 U
2,4-Dinitrophenol	51-28-5	mg/Kg	130	NP	--	0.0266 U	0.0236 U	0.0234 U
2,4-Dinitrotoluene	121-14-2	mg/Kg	1.7	NP	--	0.0447 U	0.0396 U	0.0394 U
2,6-Dinitrotoluene	606-20-2	mg/Kg	0.36	NP	--	0.0142 U	0.0126 U	0.0125 U
2-Chloronaphthalene	91-58-7	mg/Kg	4800	NP	--	0.0158 U	0.014 U	0.0139 U
2-Chlorophenol	95-57-8	mg/Kg	390	NP	--	0.0188 U	0.0167 U	0.0166 U
2-Methylnaphthalene	91-57-6	mg/Kg	240	NP	--	0.0153 U	0.0136 U	0.0135 U
2-Nitroaniline	88-74-4	mg/Kg	630	NP	--	0.0106 U	0.00943 U	0.00938 U
2-Nitrophenol	88-75-5	mg/Kg	NP	NP	--	0.0174 U	0.0154 U	0.0153 U
3,3'-Dichlorobenzidine	91-94-1	mg/Kg	1.2	NP	--	0.073 U	0.0647 U	0.0643 U
3-Nitroaniline	99-09-2	mg/Kg	NP	NP	--	0.0977 U	0.0867 U	0.0861 U
4,6-Dinitro-2-methylphenol	534-52-1	mg/Kg	5.1	NP	--	0.0488 U	0.0433 U	0.043 U
4-Bromophenyl phenyl ether	101-55-3	mg/Kg	NP	NP	--	0.0211 U	0.0188 U	0.0186 U
4-Chloro-3-methylphenol	59-50-7	mg/Kg	6300	NP	--	0.0168 U	0.0149 U	0.0148 U
4-Chloroaniline	106-47-8	mg/Kg	2.7	NP	--	0.065 U	0.0577 U	0.0573 U
4-Chlorophenyl-phenylether	7005-72-3	mg/Kg	NP	NP	--	0.00924 U	0.0082 U	0.00814 U
4-Nitroaniline	100-01-6	mg/Kg	27	NP	--	0.0408 U	0.0362 U	0.036 U
4-Nitrophenol	100-02-7	mg/Kg	NP	NP	--	0.356 U	0.316 U	0.314 U
Acenaphthene	83-32-9	mg/Kg	3600	NP	--	0.0091 U	0.00807 U	0.00802 U
Acenaphthylene	208-96-8	mg/Kg	NP	NP	--	0.011 U	0.00976 U	0.0097 U
Acetophenone	98-86-2	mg/Kg	7800	NP	--	0.0284 U	0.0252 U	0.025 U
Anthracene	120-12-7	mg/Kg	18000	NP	--	0.0275 U	0.0244 U	0.0243 U
Atrazine (Aatrex)	1912-24-9	mg/Kg	2.4	NP	--	0.0293 U	0.026 U	0.0258 U
Benzaldehyde	100-52-7	mg/Kg	170	NP	--	0.0537 U	0.0476 U	0.0473 U
Benzo(g,h,i)perylene	191-24-2	mg/Kg	NP	NP	--	0.0102 U	0.00901 U	0.00895 U
Benzo(k)fluoranthene	207-08-9	mg/Kg	11	NP	--	0.0157 U	0.0139 U	0.0139 U
Biphenyl	92-52-4	mg/Kg	47	NP	--	0.0109 U	0.00968 U	0.00962 U
Bis(2-Chloroethoxy)methane	111-91-1	mg/Kg	190	NP	--	0.0272 U	0.0241 U	0.024 U
Bis(2-Chloroethyl)ether	111-44-4	mg/Kg	0.23	NP	--	0.0302 U	0.0268 U	0.0266 U
Bis(2-Chloroisopropyl)ether	108-60-1	mg/Kg	3100	NP	--	0.0188 U	0.0167 U	0.0166 U
Bis(2-Ethylhexyl)phthalate	117-81-7	mg/Kg	39	NP	--	0.0162 U	0.0144 U	0.0143 U
Butyl benzyl phthalate	85-68-7	mg/Kg	290	NP	--	0.0159 U	0.0141 U	0.014 U
Caprolactam	105-60-2	mg/Kg	31000	NP	--	0.0326 U	0.029 U	0.0288 U
Carbazole	86-74-8	mg/Kg	NP	NP	--	0.023 U	0.0204 U	0.0202 U
Chrysene	218-01-9	mg/Kg	110	NP	--	0.0161 U	0.0143 U	0.0142 U
Dibenzofuran	132-64-9	mg/Kg	73	NP	--	0.0142 U	0.0126 U	0.0125 U
Diethyl phthalate	84-66-2	mg/Kg	51000	NP	--	0.038 U	0.0337 U	0.0335 U
Dimethyl phthalate	131-11-3	mg/Kg	NP	NP	--	0.0106 U	0.00945 U	0.00939 U
Di-n-butyl phthalate	84-74-2	mg/Kg	6300	NP	--	0.0288 U	0.0256 U	0.0254 U
Di-n-octyl phthalate	117-84-0	mg/Kg	630	NP	--	0.0208 U	0.0184 U	0.0183 U
Fluoranthene	206-44-0	mg/Kg	2400	NP	--	0.0115 U	0.0102 U	0.0102 U
Fluorene	86-73-7	mg/Kg	2400	NP	--	0.0114 U	0.0101 U	0.01 U
Hexachlorobenzene	118-74-1	mg/Kg	0.21	NP	--	0.00866 U	0.00768 U	0.00763 U
Hexachlorobutadiene	87-68-3	mg/Kg	1.2	NP	--	0.0149 U	0.0132 U	0.0131 U
Hexachlorocyclopentadiene	77-47-4	mg/Kg	1.8	NP	--	0.0274 U	0.0243 U	0.0241 U
Hexachloroethane	67-72-1	mg/Kg	1.8	NP	--	0.014 U	0.0124 U	0.0123 U
Isophorone	78-59-1	mg/Kg	570	NP	--	0.0144 U	0.0128 U	0.0127 U
m,p-Cresol	1319-77-3MP	mg/Kg	NP	NP	--	0.0257 U	0.0228 U	0.0227 U
Naphthalene	91-20-3	mg/Kg	3.8	NP	--	0.0116 U	0.0103 U	0.0102 U
Nitrobenzene	98-95-3	mg/Kg	5.1	NP	--	0.0203 U	0.018 U	0.0179 U
N-Nitroso-di-n-propylamine	621-64-7	mg/Kg	0.078	NP	--	0.00934 U	0.00829 U	0.00824 U



Table 3-2  
Backfill Soil Sample Results  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

Analyte	CAS.NO	Units	RSL Summary 05/2018 Resident Soil	Site Specific Cleanup Levels	Station	BKFL	BKFL	BKFL
					Sample ID	FJD-BKFL- 20181114-51	FJD-SLST- 20181114-51	FJD-TPSL- 20181114-51
					Depth	6"-6"	6"-6"	6"-6"
					Date	11/14/2018	11/14/2018	11/14/2018
					Type	FS	FS	FS
n-Nitrosodiphenylamine	86-30-6	mg/Kg	110	NP	--	0.0139 U	0.0124 U	0.0123 U
o-Cresol	95-48-7	mg/Kg	3200	NP	--	0.0223 U	0.0198 U	0.0196 U
Pentachlorophenol	87-86-5	mg/Kg	1	NP	--	0.047 U	0.0417 U	0.0414 U
Phenanthrene	85-01-8	mg/Kg	NP	NP	--	0.012 U	0.0106 U	0.0106 U
Phenol	108-95-2	mg/Kg	19000	NP	--	0.0246 U	0.0218 U	0.0216 U
Pyrene	129-00-0	mg/Kg	1800	NP	--	0.0108 U	0.00954 U	0.00948 U
Volatiles								
1,1,1-Trichloroethane	71-55-6	mg/Kg	8100	NP	--	0.000294 U	0.000226 U	0.000254 U
1,1,2-Trichloroethane	79-00-5	mg/Kg	1.1	NP	--	0.000294 U	0.000226 U	0.000254 U
1,1-Dichloroethane	75-34-3	mg/Kg	3.6	NP	--	0.000294 U	0.000226 U	0.000254 U
1,1-Dichloroethene	75-35-4	mg/Kg	230	NP	--	0.000294 U	0.000226 U	0.000254 U
1,2-Dichloroethane	107-06-2	mg/Kg	0.46	NP	--	0.0019 J	0.000226 U	0.000254 U
1,2-Dichloroethane	108-10-1	mg/Kg	33000	NP	--	0.000294 U	0.000226 U	0.0137
1,2-Dichloropropane	78-87-5	mg/Kg	2.5	NP	--	0.000294 U	0.000226 U	0.000254 U
2-Butanone	78-93-3	mg/Kg	27000	NP	--	0.00456 J	0.000452 U	0.00857
Acetone	67-64-1	mg/Kg	61000	NP	--	0.0491	0.000452 U	0.0869
Benzene	71-43-2	mg/Kg	1.2	NP	--	0.00115 J	0.000226 U	0.00104 J
Bromochloromethane	74-97-5	mg/Kg	150	NP	--	0.000588 U	0.000452 U	0.000507 U
Bromodichloromethane	75-27-4	mg/Kg	0.29	NP	--	0.000322 J	0.000226 U	0.000254 U
Bromomethane	74-83-9	mg/Kg	6.8	NP	--	0.00422 J	0.000452 U	0.00245 J
Carbon disulfide	75-15-0	mg/Kg	770	NP	--	0.000723 J	0.000226 U	0.000254 U
Carbon tetrachloride	56-23-5	mg/Kg	0.65	NP	--	0.000294 U	0.000226 U	0.000254 U
Chloroethane	75-00-3	mg/Kg	14000	NP	--	0.000294 U	0.000226 U	0.000254 U
Chloroform	67-66-3	mg/Kg	0.32	NP	--	0.000294 U	0.000226 U	0.000254 U
Chloromethane	74-87-3	mg/Kg	110	NP	--	0.000588 U	0.000452 U	0.000507 U
Cis-1,2-Dichloroethene	156-59-2	mg/Kg	160	NP	--	0.000294 U	0.000226 U	0.000254 U
cis-1,3-Dichloropropene	10061-01-5	mg/Kg	NP	NP	--	0.000294 U	0.000226 U	0.000254 U
Cyclohexane	110-82-7	mg/Kg	6500	NP	--	0.000294 U	0.000226 U	0.000254 U
Dichlorodifluoromethane	75-71-8	mg/Kg	87	NP	--	0.000294 U	0.000226 U	0.000254 U
Methyl Acetate	79-20-9	mg/Kg	78000	NP	--	0.000588 U	0.000452 U	0.000507 U
Methylcyclohexane	108-87-2	mg/Kg	NP	NP	--	0.000294 U	0.000226 U	0.000254 U
Methylene chloride	75-09-2	mg/Kg	57	NP	--	0.059	0.0179	0.0298
tert-Butyl methyl ether (MTBE)	1634-04-4	mg/Kg	47	NP	--	0.000294 U	0.000226 U	0.000254 U
Tetrachloroethene	127-18-4	mg/Kg	24	NP	--	0.000588 U	0.000452 U	0.000507 U
Toluene	108-88-3	mg/Kg	4900	NP	--	0.000294 U	0.000226 U	0.000254 U
Trans-1,2-Dichloroethene	156-60-5	mg/Kg	1600	NP	--	0.000294 U	0.000226 U	0.000254 U
trans-1,3-Dichloropropene	10061-02-6	mg/Kg	NP	NP	--	0.000294 U	0.000226 U	0.000254 U
Trichloroethene	79-01-6	mg/Kg	0.94	NP	--	0.000294 U	0.000226 U	0.000254 U
Trichlorofluoromethane	75-69-4	mg/Kg	23000	NP	--	0.000294 U	0.000226 U	0.000254 U
Trichlorotrifluoroethane	76-13-1	mg/Kg	6700	NP	--	0.000588 U	0.000452 U	0.000507 U
Vinyl chloride	75-01-4	mg/Kg	0.059	NP	--	0.000294 U	0.000226 U	0.000254 U

Notes:  
FS - Field Sample  
FD - Field Duplicate  
NA - Not analyzed /Not applicable  
NP - Not published  
mg/Kg - milligrams per Kilogram.  
H - High bias  
J - The identification of the analyte is acceptable; the reported value is an estimate  
K - Unknown bias  
L - Low bias  
Q - Detected below the quantitation limit  
U - Analyte not detected

Value exceeds the detection limit for specific sample analyte  
Highlighted value exceeds the EPA Regional Screening Level (RSL) and/or Site-Specific Cleanup Level



Table 3-3  
Soil Confirmation Sample Results - SPLP  
F.J. Doyle Salvage Removal Action  
Leonard, Fannin County, Texas

				Station Sample ID Depth Date Type	EAS07 EAS07-20190107-36-56 36"-36" 1/7/2019 FS	EAS07 EAS07-20190115-36-56 36"-36" 1/15/2019 FS	FJD03-06 FJD03-06-20181219-24-56 24"-24" 12/19/2018 FS	FJD04-01 FJD04-01-20190201-36-56 36"-36" 2/1/2019 FS	FJD04-02 FJD04-02-20190213-48-56 48"-48" 2/13/2019 FS	FJD04-04 FJD04-04-20190205-48-56 48"-48" 2/5/2019 FS	FJD04-07 FJD04-07-20190107-36-56 36"-36" 1/7/2019 FS	FJD04-08 FJD04-08-20190114-46-56 46"-46" 1/14/2019 FS
Analyte	CAS.NO	Units	TCEQ PCL Comparison Values									
Aroclors												
Aroclor 1016	12674-11-2	ug/L	0.5	--	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1221	11104-28-2	ug/L	0.5	--	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1232	11141-16-5	ug/L	0.5	--	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1242	53469-21-9	ug/L	0.5	--	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1248	12672-29-6	ug/L	0.5	--	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1254	11097-69-1	ug/L	0.5	--	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor 1260	11096-82-5	ug/L	0.5	--	3	0.55	0.1 U	NA	0.1 U	0.1 U	0.42 JQ	0.28 JQH
Metals												
Cadmium	7440-43-9	ug/L	0.5	--	NA	NA	NA	NA	NA	NA	0.2 U	NA
Manganese	7439-96-5	ug/L	1100	--	91.9	75	8.37	10.1	38.9	58.6	112	75.2
Silver	7440-22-4	ug/L	120	--	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Notes:

FS - Field Sample.

NA - Not analyzed / Not applicable.

H - High bias.

J - The identification of the analyte is acceptable; the reported value is an estimate.

Q - Detected below the quantitation limit.

U - Analyte not detected.

Value exceeds the detection limit for specific sample analyte.

Value exceeds Texas Commission on Environmental Quality (TCEQ) Tier 1 Residential GW-GW-Ing. Protective Concentration Levels (PCLs) established for groundwater ingestion.

SPLP - Synthetic Precipitation Leaching Procedure.

Soil samples collected in grids EAS07, FJD04-01, FJD04-02, FJD04-04, FJD04-07, and FJD04-08 were taken from the top of bedrock following excavation activities. The depth to bedrock ranged between 36 inches and 48 inches below ground surface.

FJD03-06 was excavated to a depth of 24 inches below ground surface.

